

Nos. 14-CV-101 & 14-CV-126

**IN THE DISTRICT OF COLUMBIA
COURT OF APPEALS**

COMPETITIVE ENTERPRISE INSTITUTE, *ET AL.*,
Defendants-Appellants,

and

NATIONAL REVIEW, INC.,
Defendant-Appellant,

v.

MICHAEL E. MANN, PH.D.,
Plaintiff-Appellee.

*On Appeal from the Superior Court of the District of Columbia
Civil Division, No. 2012 CA 008263 B*

**BRIEF OF *AMICUS CURIAE* DR. JUDITH A. CURRY
IN SUPPORT OF APPELLANTS'
PETITIONS FOR REHEARING OR REHEARING *EN BANC***

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January 25, 2017

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INTEREST OF AMICUS CURIAE

Dr. Curry is a prominent climate scientist and former longtime chair of the Georgia Institute of Technology's School of Earth and Atmospheric Sciences. Dr. Curry has been a member of the National Research Council's Climate Research Committee and the United States Department of Energy's Biological & Environmental Research Advisory Committee. She has authored three books and nearly two hundred scholarly articles on climate science. Dr. Curry also maintains an active blog, Climate Etc., which provides a forum for climate researchers, academics, technical experts from other fields, citizen scientists, and the interested public to engage in a discussion on topics related to climate science and the science-policy interface. Dr. Curry has received numerous federal grants and contracts over the past ten years to study climate science. Her full curriculum vitae is available online and is also attached hereto as Exhibit 1.¹

As it relates to this case, Dr. Curry has been critical of Appellee Michael Mann's methodological approach to climate science and the conclusions he has reached. Dr. Curry has experienced personal and professional attacks from Dr. Mann for her criticisms of his work. Dr. Mann has a pattern of attacking those who disagree with him and this case is another in a long line of tactics to silence debate over the science of global warming. Dr. Curry is a stalwart supporter of free speech and believes it plays a crucial role in the advancement of scientific debate. She has an acute interest in the outcome of this case because should Dr. Mann prevail, he would be emboldened to continue his pattern of attacks against Dr. Curry and others like her, and others would be emboldened to do so. She also has an interest in robust debate on climate science in keeping with the scientific principles she espouses.

¹ See Judith A. Curry, Curriculum Vitae, <http://b.gatech.edu/2k4d6Pf> (last visited Jan. 17, 2017).

INTRODUCTION AND SUMMARY OF ARGUMENT

“Science is always sold as facts, and it’s not, it’s process. And that process is mainly arguing.”²

Scientific progress and democratic governance depend upon vigorous and open debate. Comm. on Sci., Eng’g, and Pub. Policy, Nat’l Acad. of Sci., *et al.*, On Being A Scientist xv (3rd ed. 2009) (“Scientific knowledge is achieved collectively through discussion and debate.”); Benjamin Franklin, *On Freedom of Speech and the Press*, Penn. Gazette, Nov. 17, 1737 (“Freedom of speech is a principal pillar of a free government; when this support is taken away, the constitution of a free society is dissolved, and tyranny is erected on its ruins.”). Efforts to use legislation or the courts to attack and silence those that disagree must be opposed. *See New York Times v. Sullivan*, 376 U.S. 254 (1964). In the District of Columbia — where so many of the Nation’s public policy debates occur — speakers and writers should be confident in their ability to exercise their free speech rights over politically contentious issues.

Dr. Mann has transgressed scientific norms and offended First Amendment principles by bringing a defamation claim against Appellants for their pointed criticism of his scientific methodology. Dr. Mann’s suit is unsupportable both because of his behavior toward his critics, particularly *amicus curiae* Dr. Curry, which demonstrates that the debate over climate science is often contentious and because Dr. Mann engages in the debate often to silence rather than to illuminate. The Court ought not be party to stifling debate.

In its recent transition from the *Dyas/Frye* test to the *Daubert* test for the admissibility of scientific evidence, this Court has embraced the view that generally accepted scientific viewpoints are not always more reliable than the minority opinion. *See Motorola Inc., v. Murray*,

² Tamsin Edwards, BBC Radio, Inside Science, *The perils of explaining science* (Jan. 12, 2017), available at <http://bbc.in/2jwOwpn>.

147 A.3d 751 (D.C. 2016). Minority scientific views must be protected. Otherwise, the very process this Court relies on for reliable scientific testimony will be traduced.

The Anti-SLAPP statute specifically to protect these interests. The panel’s decision refusing to dismiss Dr. Mann’s suit endangers scientific norms, First Amendment principles, and minority viewpoints. This Court should grant the Appellants’ petitions and reverse the panel.

ARGUMENT

I. SCIENTIFIC NORMS AND FIRST AMENDMENT JURISPRUDENCE BOTH EMBRACE THE VIEW THAT ROBUST DEBATE IS CRUCIAL TO TRUTH, PROGRESS, AND DEMOCRATIC GOVERNANCE.

Academic science has attracted a great deal of study. This study has generated a corpus of norms about how scientists should comport themselves. In his landmark 1973 work *The Sociology of Science*, Robert Merton established norms upon which scientists should rely. These Mertonian norms include: communalism, universalism, disinterestedness, originalism, and organized skepticism. *See* Robert K. Merton, *The Sociology of Science* 268–78 (Norman W. Storer ed., 1973). These norms have been described as follows: “Communalism: Science is public knowledge, freely available to all . . . Universalism: There are no privileged sources of scientific knowledge . . . Disinterestedness: Science is done for its own sake. Originality: Science is the discovery of the unknown . . . Skepticism: Scientists take nothing on trust.” John Ziman, *An Introduction to Science Studies: The Philosophical and Social Aspects of Science and Technology* 84–86 (1984). Merton’s original work was done in the aftermath of World War II and is understood as making the argument for the necessity of these norms to scientific advancement in a democratic society.³

³ *See* Laura G. Pedraza-Fariña, *Patent Law and the Sociology of Innovation*, 2013 *Wisc. L. Rev.* 813, 836 (2013) (Merton sought to “show[] that academic science could foster democracy and that, in turn, democracy was crucial to the practice of academic science. Thus, Merton’s original

The National Academy of Sciences built on Mertonian norms by establishing guidelines of its own that seek to foster a “community characterized by curiosity, cooperation, and intellectual rigor.” Comm. on Sci., Eng’g, and Pub. Policy, Nat’l Acad. of Sci., *et al.*, *On Being A Scientist* 1 (3rd ed. 2009). While the Academy encourages open debate and criticism, *id.* at xv, it treats the falsification of data, intent to mislead, and retaliation against critics as examples of serious research misconduct. *Id.* at 15–17.

Mertonian norms, reinforced by modern principles guiding scientific research, complement the principles undergirding the First Amendment. In Justice Holmes’ celebrated dissent in *Abrams v. United States*, he lit the way for this Court. 250 U.S. 616, 630–31 (1919) (Holmes, J. dissenting). Holmes wrote:

Persecution for the expression of opinions seems to me perfectly logical. If you have no doubt of your premises or your power and want a certain result with all your heart you naturally express your wishes in law and sweep away all opposition. To allow opposition by speech seems to indicate that you think the speech impotent, as when a man says that he has squared the circle, or that you do not care whole heartedly for the result, or that you doubt either your power or your premises. But when men have realized that time has upset many fighting faiths, they may come to believe even more than they believe the very foundations of their own conduct that the ultimate good desired is better reached by free trade in ideas—that the best test of truth is the power of the thought to get itself accepted in the competition of the market, and that truth is the only ground upon which their wishes safely can be carried out. That at any rate is the theory of our Constitution. . . . I think that we should be eternally vigilant against attempts to check the expression of opinions that we loathe.

Id. at 630. Holmes’ dissent founds the principle that when litigants silence dissenting opinions they “harm[] not only themselves but society as a whole, which is deprived of an uninhibited marketplace of ideas.” *Rutti v. Wyoming*, 100 P.3d 394, 401 (Wyo. 2004).

1942 paper describing the norms of science emphasized the connection between free science and free society.”) (citing H.M. Collins, *The Sociology of Scientific Knowledge: Studies of Contemporary Science*, 9 Ann. Rev. Soc. 265, 266 (1983) (emphasizing “Merton’s . . . thinking about the norms of science must be seen in the context of the rise of European Totalitarianism”).

Dr. Mann's behavior toward his critics, both in this litigation and toward Dr. Curry (*see* below), demonstrate the weakness of his belief in his own position. This Court should not countenance Dr. Mann's behavior or his lawsuit.

II. THIS COURT SHOULD NOT ALLOW DR. MANN TO USE LAWSUITS AS ANOTHER WEAPON TO HARASS AND SILENCE HIS CRITICS.

Dr. Mann's present suit against his critics is another example of his pattern of attacking and harassing those with whom he disagrees. His treatment of Dr. Curry also violates the established Mertonian norms.

The Mertonian norm of communalism views science as public knowledge, which should be freely available to all. Dr. Mann violated this norm by helping Dr. Phil Jones — a colleague of Dr. Mann's who was likewise implicated in the climate research scandals emanating from the University of East Anglia — destroy emails and other data to avoid their publication via the Freedom of Information Act. *See, e.g.,* Fred Pearce, *Climate scientists shut out sceptics by turning down data requests*, The Guardian, Feb. 3, 2010, <http://bit.ly/2k4PR7V> (quoting an email from Dr. Jones to Dr. Mann asking “Can you delete any emails you may have had with Keith [Briffa] re AR4? Keith will do likewise. Can you also email Gene [Eugene Wahl, a paleoclimatologist at the National Centre for Atmospheric Research in Boulder, Colorado] and get him to do the same . . . We will be getting Caspar [Ammann also from NCAR] to do the same.”); *see also* Email from Dr. Phil Jones to Dr. Michael Mann, Jan. 16, 2004, *available at* <http://bit.ly/2j0LR3q> (asking Dr. Mann to “Delete after reading - please!”).⁴

⁴ Dr. Mann attempted to thwart efforts by climate researchers Steven McIntyre and Ross McKittrick to reconstruct the data behind the Hockey Stick graph. *See* Steve McIntyre, *Some Thoughts on Disclosure and Due Diligence in Climate Science*, Climate Audit, Feb 14, 2005, <http://bit.ly/2iVXUe> (“In the case of the Mann et al [1998,1999] study, used for the IPCC's ‘hockey stick’ graph, Mann was initially unable to remember where the data was located, then

The Mertonian norm of universalism posits there are no privileged sources of scientific knowledge, *i.e.*, all scientists and researchers are valid contributors to scientific progress. Dr. Mann has repeatedly violated this norm by attempting to delegitimize researchers who criticize his work. This includes Dr. Curry, who wrote a multi-part series on her blog discussing the infamous Hockey Stick graph and efforts to “hide the decline” in the temperature record that created problems for Dr. Mann’s position on global warming. *See, e.g.*, Judith Curry, *IPCC TAR and the hockey stick*, Climate Etc., Apr. 29, 2014, <http://bit.ly/2ja0z8Y> (questioning how Dr. Mann was put in a position to allow the “hockey stick travesty [to] occur”); Judith Curry, *Hiding the Decline*, Climate Etc., Feb. 22, 2011, <http://bit.ly/2j9dDvl> (quoting Dr. Mann as writing “‘everyone in the room’ agreed that the [decline] was a ‘potential distraction/detraction from the reasonably consensus viewpoint we’d like to show’”).

Dr. Curry wrote about Dr. Mann’s use of this litigation against his critics. Judith Curry, *Fraudulent (?) hockey stick*, Climate Etc., Sept. 11, 2014, <http://bit.ly/2iINwKs> (opining that Defendants-Appellants’ “accusations of data cherry picking and flawed statistical analyses and interpretations seem to be justified”); Judith Curry, *Steyn et al. versus Mann*, Climate Etc., Feb. 22, 2014, <http://bit.ly/2iBIKED> (highlighting that important issues in this case include “freedom of speech, academic freedom, media access to information, I come down stalwartly on the side freedom of speech and media access to information.”); Judith Curry, *Mann versus Steyn*, Climate Etc., Jan. 26, 2014, <http://bit.ly/2j98pzE> (“You would think that [for] someone who is so sensitive about people criticizing or defaming him[], that he would be very careful about

provided inaccurate data, then provided a new version of the data which was inconsistent with previously published material, etc.”).

defaming and insulting others. Sometimes it seems like Mann spends half his day suing people for defaming him, and then the other half of his day defaming others on twitter.”).

Dr. Mann reacted to Dr. Curry’s differing view on climate science by repeatedly using Twitter to harass and belittle her over their disagreements.⁵ Dr. Mann accused Dr. Curry of being “anti-science” while she was testifying to the United States Senate, @MichaelEMann, Twitter (Jan. 16, 2014, 3:29 PM), <http://bit.ly/2jz37Ar>; of being “frightened” by Dr. Curry’s “apparent obsession” with him, @MichaelEMann, Twitter (Jan. 22, 2015, 12:21 PM), <http://bit.ly/2jKTxZ>; of “jaw-dropping attacks on [the] scientific community,” @MichaelEMann, Twitter (Feb. 28, 2015, 10:59 PM), <http://bit.ly/2jKROmp>; tweeting a story titled “Judith Curry & Mark Steyn: Partners in Slime,” @MichaelEMann, Twitter (Aug. 15, 2015 8:59 PM), <http://bit.ly/2jKRXpS>; of being the “lead Carnival Barker [sic] in the circus of climate denial,” @MichaelEMann, Twitter (Aug. 20, 2015 12:00 PM), <http://bit.ly/2iR7LZG>; and saying he did not like journalists printing “Judith Curry’s silly ranting,” @MichaelEMann, Twitter (Dec. 26, 2016 11:38 AM), <http://bit.ly/2jz1UsK>.

When Dr. Curry announced that she was leaving academia due to the “the poisonous nature of the scientific discussion around human-caused global warming,” Dr. Mann continued his unseemly comments, calling her three books and nearly two hundred scholarly articles a “meager” contribution to science and stating she “played a particularly pernicious role in the climate change denial campaign [by] laundering standard denier talking points but appearing to grant them greater authority courtesy of the academic positions she has held[.]” Scott Waldman,

⁵ Dr. Mann’s reaction to criticism is contrasted with that of Albert Einstein, who, when confronted with a book titled “100 Authors Against Einstein” criticizing his general theory of relativity, responded “If I were wrong, then one would have been enough!” See Stephen Hawking, *A Brief History of Time* (1998).

Judith Curry retired, citing 'craziness' of climate science, E&E News: People, Jan. 4, 2017, <http://bit.ly/2jKBP81>. Dr. Mann called her work “boilerplate climate change denial drivelt.” *Id.*

For her part, Dr. Curry has taken these attacks in stride. In response to Dr. Mann’s claim that she was “anti-science,” Dr. Curry requested “Since you have publicly accused my Congressional testimony of being ‘anti-science,’ I expect you to (publicly) document and rebut any statement in my testimony that is factually inaccurate or where my conclusions are not supported by the evidence that I provide.” Judith Curry, *Mann on advocacy and responsibility*, Climate Etc., Jan. 18, 2014, <http://bit.ly/2iJ7CEi>. A substantive response from Dr. Mann was not forthcoming. Dr. Curry wrote that “what Mann has said about me is at least as bad as what Steyn said about Mann, particularly since Mann (an academic) is passing judgement on my science and my behavior as a scientist (which is my profession and source of income).” Judith Curry, *(Micro)aggressions on social media*, Climate Etc., Oct. 16, 2013, <http://bit.ly/2jzloxA>. Dr. Curry continued that she has “tried to understand Michael Mann’s perspective in suing so . . . many people, while at the same time so freely throwing insults at others and even defaming other scientists. My understanding is this. Michael Mann does not seem to understand the difference between criticizing a scientific argument versus smearing a scientist.” *Id.* Despite Dr. Mann’s sustained harassment, Dr. Curry has not brought a defamation lawsuit to use the courts to silence *her* critic.

If the entire Court does not hear this case, those like Dr. Mann who use libel laws to silence their critics will prevail, while those who use normal scientific debate will find themselves disadvantaged in the marketplace of ideas. *See Whitney v. California*, 274 U.S. 357, 377 (1927) (Brandeis, J., concurring) (In order to “to avert the evil [of disputed positions] by the processes of education, the remedy to be applied is more speech, not enforced silence.”).

Dr. Mann strayed outside the bounds of scientific and public policy debate by bringing this suit in an effort to use the legal system to shut down critics that he was unable to persuade or refute. As one commentator noted, “Mann wants a legal guarantee that he can dish it out, but he doesn’t have to take it.” Robert Tracinski, *Free Speech for Mann, But Not for Thee*, The Tracinski Letter, Feb. 19, 2014, <http://bit.ly/2k4eKQN>. This Court should not endorse Dr. Mann’s use of this litigation as a cudgel against critics.

III. THIS COURT HAS RECENTLY RECOGNIZED THE IMPORTANCE OF DISSENTING SCIENTIFIC VIEWS.

This Court’s recent adoption of the *Daubert* standard, also powerfully argues for *en banc* review of the instant decision. The Court re-acknowledged the powerful effect of scientific testimony on the fact finder, stating, “[B]ecause expert or scientific testimony possesses an aura of special reliability and trustworthiness, the proffer of such testimony must be carefully scrutinized.” *Motorola*, 147 A.3d at 753 (quoting *Ibn-Tamas v. United States*, 407 A.2d 626, 632 (D.C. 1979)). For this reason, this Court granted *en banc* review and took the momentous step of abandoning, after decades of use, the *Dyas/Frye* test for scientific evidence in court. *Motorola*, 147 A.3d at 752, 758–59. The reasons to take the question in *Motorola*, counsel for taking the question presented here. *Id.* at 752, n. 5. A substantial question of law has been presented that the Court should address.

Motorola emphasized that the gatekeeping role of the trial judge was to ensure “that an expert . . . employs in the courtroom the same level of intellectual rigor that characterizes the practice of an expert in the relevant field.” *Motorola*, 147 A.3d at 755 (citing *Kumho Tire Co. v. Carmichael*, 526 U.S. 137, 152 (1999)). The Court adopted the *Daubert* standard, *en banc*, because it recognized that a generally accepted scientific methodology can produce “bad science” that should not be allowed in court, and a new, not generally accepted method can

produce “good science” that should be admitted. *Motorola*, 147 A.3d at 756–57 (“Why we adopt Rule 702”). This Court focused, not on whether the science at issue was generally accepted, but “on the reliability of principles and methods, and their application,” which would make for better decision making in the courts of this jurisdiction. *Id.* at 757.

This Court should rehear this case *en banc* to ensure that scientific principles and information needed under *Daubert* are available to this Court. Otherwise, such information may be eliminated by the chilling of scientific debate and methodology by the weaponized forces of “generally accepted” science. Unlike Dr. Mann, this Court recognizes that just because one expert’s testimony is reliable that does not require the conclusion that a contrary expert testimony is therefore unreliable. *Id.* at 758 (“[M]inority status is not a proxy for unreliability.”).

If this Court allows the panel decision to stand unreviewed, not only will the protections of the Anti-SLAPP Act not truly apply to the Appellants-Defendants (or anyone else questioning Dr. Mann in colorful language), but the very scientific inquiry and methods that this Court relies upon will be circumvented. Outside the walls of the courtroom valid opinions will be squelched. They, therefore, will not be available when this Court needs to perform its gatekeeping *Daubert* analysis in the areas of climate science. Neither Galileo nor Einstein sued their detractors for libel. They simply let their work and ideas speak for themselves to eventual, substantial vindication. The Court should take up this case *en banc*, and allow Dr. Mann the same recourse.

CONCLUSION

For the foregoing reasons, this Court should grant the petition for rehearing *en banc*.

//

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Date: January 25, 2017

Respectfully submitted,

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Georgia Institute of Technology

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Georgia Institute of Technology

1992-2002 Professor, University of Colorado-Boulder
Department of Aerospace Engineering Sciences
Program in Atmospheric and Oceanic Sciences
Environmental Studies Program

1989-1992 Associate Professor, Department of Meteorology, Penn State

1986-1989 Assistant Professor, Dept of Earth and Atmospheric Sciences, Purdue University

1982-1986 Assistant Scientist, Dept of Meteorology, University of Wisconsin-Madison

Awards/Honors

2011 Graetzinger Moving School Forward Award, Georgia Tech

2007 Fellow, American Association for the Advancement of Science

2006 Best Faculty Paper Award, Georgia Tech Sigma Xi

2004 Fellow, American Geophysical Union

2002 NASA Group Achievement Award for CAMEX-4

2002 Green Faculty Award, University of Colorado

1997 Elected Councilor, American Meteorological Society

1995 Fellow, American Meteorological Society

1992 Henry G. Houghton Award, the American Meteorological Society

1988 Presidential Young Investigator Award, the National Science Foundation

Recent Professional Activities

World Meteorological Organization / International Council of Scientific Unions / International Ocean Commission / World Climate Research Programme

- Global Energy and Water Experiment (GEWEX) Radiation Panel (1994-2004)
- GEWEX Cloud System Studies (GCSS) Science Steering Group (1998-2004)
- Chair, GCSS Working Group on Polar Clouds (1998-2004)
- Chair, GEWEX Radiation Panel SEAFLUX Project (1999-2004)

- Steering Committee, IGAC/SOLAS Air-Ice Chemical Interactions (2003-2006)
- Science Steering Group, Arctic Climate System (ACSYS) Programme (1994-2000)

National Research Council – National Academies

- Space Studies Board (2004-2007)
- Climate Research Committee (2003-2006)
- Panel: A Strategy to Mitigate the Impact of Sensor Descopes and De-manifests on the NPOESS and GOES-R Spacecraft (2007-2008)
- Committee to review CCSP SAP 1.1 Temperature Trends in the Lower Atmosphere: Steps for Understanding and Reconciling Differences (2007)

U.S. Federal Agencies

- DOE Biological & Environmental Research Advisory Committee (BERAC) (2012-2015)
- Earth Science Subcommittee, NASA Advisory Council (2009-2013)
- Search Committee, NSF Director for Geoscience (2007)
- External Advisory Board, NCAR Atmospheric Technology Division (2004-2006)
- Science Board, DOE ARM Climate Reference Facility, (2008-2011)
- External Review Committee, COSIM Program, Los Alamos National Laboratory (2007)
- NOAA Climate Working Group (2004-2009)

Professional Societies

- Executive Committee, American Physical Society Topical Group on Physics of Climate (2013-2016)
- Member, Fellows Committee, American Geophysical Union (2013-2014)
- Executive Committee of the Council, American Meteorological Society (1998-2000)
- Councilor, American Meteorological Society (1997-2000)

Other

- Member, Visiting Committee, Dept of Earth and Atmospheric Sciences, Purdue Univ. (2008)
- Member, Visiting Committee, Dept of Earth, Atmosphere and Planetary Sciences, the MIT Corporation (2009 -)

RESEARCH

Books

Khvorostyanov, V.I. and J.A. Curry, 2013: *Kinetics and Thermodynamics of Clouds and Precipitation*. Cambridge University Press, Cambridge University Press (in press).

Curry, J.A. and P.J. Webster, 1999: *Thermodynamics of Atmospheres and Oceans*. Academic Press, London, 467 pp (second edition under contract).

Holton, J.P., J.A. Curry, and J. Doyle, eds., 2003: *Encyclopedia of Atmospheric Sciences*. Academic Press, London, 6244 pp.

Refereed Publications

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2. Herman, G.F. and J.A. Curry, 1984: Observational and theoretical studies of solar radiation in Arctic stratus clouds. *J. Clim. Appl. Met.*, 23, 5-24.
3. Curry, J.A. and G. F. Herman, 1985: Infrared radiative properties of Arctic stratus clouds. *J. Clim. Appl. Met.*, 24, 525-538.
4. Curry, J.A. and G.F. Herman, 1985: Relationships between large-scale heat and moisture budgets

- and the occurrence of Arctic stratus clouds. *Mon. Wea. Rev.*, 113, 1441-1457.
5. Curry, J.A., 1986: Interactions among turbulence, radiation and microphysics in Arctic stratus clouds. *J. Atmos. Sci.*, 43, 90-106.
 6. Curry, J.A., 1986: Reply to comments on "Interactions between turbulence, radiation and microphysics in Arctic stratus clouds." *J. Atmos. Sci.*, 43, 2753-2755.
 7. Curry, J.A., 1987: The contribution of radiative cooling to the formation of cold-core anticyclones. *J. Atmos. Sci.*, 44, 2575-2592.
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 9. Curry, J.A., 1988: Arctic cloudiness in spring from satellite imagery: some comments. *J. Climatol.*, 8, 543-549.
 10. Curry, J.A. and C.-H. Moeng, 1989: Role of cloud-top radiative cooling in the production of turbulence kinetic energy. *IRS'88: Current Problems in Atmospheric Radiation*, 60-63.
 11. Curry, J.A., F.G. Meyer and E.E. Ebert, 1989: Cloudless ice-crystal precipitation in the polar regions. *IRS '88: Current Problems in Atmospheric Radiation*, 80-83.
 12. Tian, L. and J.A. Curry, 1989: Cloud overlap statistics. *J. Geophys. Res.*, 94, 9925-9935.
 13. Curry, J.A. and E.E. Ebert, 1990: Sensitivity of the thickness of Arctic sea ice to the optical properties of clouds. *Ann. Glaciol.*, 14, 43-46.
 14. Curry, J.A., F.G. Meyer, L.F. Radke, C.A. Brock, and E.E. Ebert, 1990: The occurrence and characteristics of lower tropospheric ice crystals in the Arctic. *Int. J. Climatol.*, 10, 749-764.
 15. Curry, J.A., C.D. Ardeel, and L. Tian, 1990: Liquid water content and precipitation characteristics of stratiform clouds as inferred from satellite microwave measurements. *J. Geophys. Res.*, 95, 16659-16671.
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 17. Ebert, E.E. and J.A. Curry, 1992: A parameterization of cirrus cloud optical properties for climate models. *J. Geophys. Res.*, 97, 3831-3836.
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Recent Invited Lectures

- American Physical Society Meeting, March 2014, Denver, *Causes and implications of the growing discrepancy between climate models and observations*
- Invited Participant, APS Climate Change Statement Workshop, New York City, January 2014, *Statement on the IPCC AR5 WGI Report*
- Invited talk, UK-US Workshop on Climate Science Needed to Support Robust Adaptation Decisions. Feb 2014, Atlanta, *Generating possibility distributions of scenarios for regional climate change*
- Invited talk, Workshop on the Roles of Climate Models: Epistemic, Ethical and Socio-political Perspectives Oct 2013, Eindhoven, The Netherlands, *A 21st century perspective on climate models from a climate scientist*
- Plenary talk, European Centre for Medium Range Weather Forecasting Annual Users Meeting, June 7, 2013
- Invited talk, American Geophysical Union Fall meeting: *The impact of declining Arctic sea ice on northern hemisphere winter weather.* December 7, 2012, San Francisco.
- Invited talk, Royal Society Workshop on Handling Uncertainty in Weather and Climate Prediction Applications: *Climate models: fit for what purpose?* October 5, 2012, London.
- Plenary invited talk, American Physical Society April meeting: *Berkeley Earth Temperature Project.* April 3, 2012, Atlanta.
- DOE BERAC, invited lecture: *What can we learn from climate models?* February 27, 2012, Washington DC.
- U.N. InterAcademy Council (IAC) Norway meeting: *Research integrity and scientific responsibility.* January 26, 2012
- Invited talk, American Geophysical Union Fall meeting: *Engaging the public on climate change.* December 11, 2011, San Francisco.
- Keynote address at Santa Fe Conference on Climate Change: *Climate Science and the Uncertainty Monster.* November 2, 2011
- Invited talk, Santa Fe Conference on Climate Change: *A critical look at the IPCC AR4 attribution argument.* November 3, 2011
- Victor Starr Memorial Lecture at MIT: *Climate Science and the Uncertainty Monster.* September 30, 2011, Boston
- Invited talk, American Chemical Society Annual Meeting (Denver): *Climate Science and the Uncertainty Monster.* August 28, 2011, Denver

Research Grants and Contracts (last 10 years)

- Application of global weather and climate model output to the design and operation of wind energy systems. DOE STTR Phase II, \$980K, 4/22/13 – 4/21/15. (PI)
- Integrated analysis of atmospheric water cycle in intense marine storms. NASA, \$189K 11/1/12-10/31/14. (PI)
- Application of global weather and climate model output to the design and operation of wind energy systems. DOE STTR Phase I, \$150K, 2/19/11 – 11/19/11. (PI)
- Climatology of African Easterly Waves. NOAA, 8/1/10 – 7/31/13, \$240K (PI)
- Impact of Marine and Dust Aerosols on Atlantic Tropical Cyclone Development. NSF, \$349,901, 4/1/11-3/31/14 (co-PI).
- Estimating the tropospheric BrO budgets from satellite measurements. NASA, \$50K, 1/12/11-1/11/13 (PI)
- Impact of storms on ocean surface turbulent fluxes, NOAA, 8/1/10 – 7/31/11, \$100K, (PI)

- Impact of Marine and Dust Aerosols on Atlantic Tropical Cyclone Development. NSF, \$349,901, 4/1/11-3/31/14 (co-PI).
- Impact of Aerosols on the Arctic Hydrological Cycle. NASA, 06/01/07-05/31/10, \$480,000 (co-PI).
- Spatio-temporal Variability of Aerosol Load in the Tropics: Interaction with Precipitation and the Radiation Budget. NOAA, 5/01/08-4/30/11, \$366,000 (co-PI)
- Towards the Understanding and Parameterization of High Latitude Cloud and Radiation Processes. DOE ARM, 12/01/02-11/30/08, \$720,000 (PI)
- Global analysis of ocean surface fluxes of heat and freshwater: satellite products, NWP analyses, and CMIP simulations. NASA, 10/1/05-9/30/10, \$1.4M (PI).
- Parameterization of cloud particle activation and diffusional growth. NASA, 11/05-10/08, \$450,000.
- UAV Systems Analysis for Earth Observations: Education and Outreach. NASA, 3/05-3/08, \$350,000 (PI)
- Arctic Regional Climate Model Intercomparison Project: Evaluation and Interpretation Using Data Products from FIRE.ACE. NASA, 12/03-12/07, \$525,000. (PI)
- Applications of Aerosondes to long-term measurements of the atmosphere and sea ice surface in the Beaufort/Chukchi sector of the Arctic Ocean, NSF, 9/1/99-8/31/06, \$3,997,402. (PI)
- Climate variability of the Alaskan North Slope Coastal Region: Observations, simulations, and integrated assessment, NSF/NOAA, 1/1/01-1/1/05, \$2,404,308 (Co-PI)

EDUCATION/TEACHING

Courses Taught

- Global Change Seminar (Georgia Tech, grad/undergrad)
- Hurricanes (Georgia Tech, grad/undergrad)
- Thermodynamics of Atmospheres and Oceans (Georgia Tech, graduate)
- Thermodynamics of the Earth System (Georgia Tech, undergraduate)
- Preparing Future Faculty (University of Colorado; graduate)
- Thermodynamics of Atmospheres and Oceans (University of Colorado; graduate)
- Remote Sensing of the Atmosphere and Ocean (University of Colorado; graduate)
- Aircraft Probing of the Lower Atmosphere (University of Colorado; graduate)
- Engineering Thermodynamics and Heat Transfer (University of Colorado; undergraduate)
- Engineering Senior Design Lab (University of Colorado; undergraduate)
- Survey of Meteorology (Purdue University; undergraduate)
- Atmospheric Thermodynamics (Purdue University, Penn State University; undergraduate)
- Atmospheric Physics (Purdue University, Penn State University; undergraduate)
- Cloud and Precipitation Physics (Purdue University; graduate)

Supervision of students

- M.S. graduates: 29 total
- Ph.D. graduates: 22 total
- Postdocs and research scientists supervised: 15 total

ENGAGEMENT in SCIENCE and TECHNOLOGY POLICY

Congressional Testimony

- Testimony, Senate Environment and Public Works, “President’s Climate Action Plan,” 1/16/14 http://www.epw.senate.gov/public/index.cfm?FuseAction=Files.View&FileStore_id=07472bb4-3eeb-42da-a49d-964165860275
- Testimony, House Subcommittee on Energy & Environment, “Policy Relevant Climate Issues in Context”, 4/26/13 <http://curryja.files.wordpress.com/2013/04/curry-testimony-2013-il.pdf>
- Testimony, House Subcommittee on Energy & Environment, “Rational Discussion of Climate Change: the Science, the Evidence, the Response,” 11/17/10 <http://curryja.files.wordpress.com/2013/02/curry-epw-testimony.pdf>
- Testimony, House Select Committee on Energy Independence and Global Warming, “Dangerous Climate Change,” 4/26/07 <http://curryja.files.wordpress.com/2013/02/energy-curry-testimony.pdf>
- Testimony, House Reform Committee, “Hurricanes and Global Warming,” 7/20/06 <http://curry.eas.gatech.edu/climate/pdf/testimony-curry.pdf>

Local/regional engagement

- Advisory Council, Florida Hurricane Catastrophe Fund
- Consulting for Florida Power & Light to increase resilience of the electric grid to hurricanes
- Organizer, Georgia Climate Change Summit 05/06/08 <http://climatesummit.gatech.edu>
- Participant, Atlanta Regional Commission Climate Change Workshop, “Local Warming: Consequences of Climate Change for Atlanta.” http://curry.eas.gatech.edu/climate/pdf/atlanta_rev.pdf

Essays on the Integrity of Science

- Opinion: Can scientists rebuild trust in Climate Science? *Physics Today*, 2/10/10 http://www.physicstoday.org/daily_edition/politics_and_policy/1.2531584
- An open letter to graduate students and young scientists in fields related to climate research. NYTimes <http://dotearth.blogs.nytimes.com/2009/11/27/a-climate-scientist-on-climate-skeptics/>
- Research Integrity and Scientific Responsibility. U.N. InterAcademy Council (IAC) Norway 1/26/12 <http://judithcurry.com/2012/01/26/questions-on-research-integrity-and-scientific-responsibility-part-ii/>

Weblog

- Proprietor of the weblog Climate Etc. <http://www.judithcurry.com>
Climate Etc. provides a forum for climate researchers, academics and technical experts from other fields, citizen scientists, and the interested public to engage in a discussion on topics related to climate science and the science-policy interface.