

*This is the second in a series of articles encouraged by the Board of Certified Consulting Meteorologists and the National Council of Industrial Meteorologists to explore the ethical issues that can be encountered conducting business in the meteorological community. The purpose is to initiate a discussion within the broader membership about how the professional guidelines section of the AMS constitution comes to life in the conduct of everyday life of professional meteorologists. Comments are welcome and should be addressed to the authors. More formal responses can also be made to the editor of BAMS.*

## THE ETHICS OF DEFINING A PROFESSIONAL

### Who Is a Meteorologist?

BY JERRY D. HILL, CCM, AND GERALD J. MULVEY, CCM

What is a “professional?” There are professional athletes, professional actors, and the term is even sometimes used by tradesmen to indicate the quality of their work, such as “professional plumbers.” In the most basic sense, professionals are people who earn their living in a profession. More broadly, a professional has specialized skills and knowledge that required independent learning and effort on their part to attain. Before the AMS had its current categories of memberships, one of the categories was “professional member.”

In any occupation, there is usually a sense of pride of profession. People in that occupation can resent others who attempt to portray themselves as a member of that profession without “paying their dues.” This is particularly true in the atmospheric sciences profession, where the complexity of our science often warrants admiration from others.

To call oneself a professional in a certain occupation is intended to bring respect and inspire confidence. To protect the public, many professions, such as medicine, engineering, or public accounting, are regulated by state laws that establish the training, examination process, and experience required to qualify for a license. People using a title such as “medical doctor” or “certified public accountant” when not actually licensed in such a field are guilty

of more than just a violation of ethical standards; they can land in jail or at least owe a hefty fine for the misrepresentation.

States have never licensed professional meteorologists, however, and some people have claimed publicly to be a meteorologist even with limited or no scientific training. Such representations might be considered a breach of personal ethics or professional conduct, even though no laws prohibit such actions.

We might define what, in a strict sense, the qualifications are for a person to be considered a meteorologist. In 1990, the AMS adopted a guideline ([www.ametsoc.org/policy/whatisam.html](http://www.ametsoc.org/policy/whatisam.html)) that describes a meteorologist as “an individual with specialized education who uses scientific principles to explain, understand, observe or forecast the earth’s atmospheric phenomena and/or how the atmosphere affects the earth and life on the planet.” This specialized education would involve a bachelor’s or higher degree in meteorology, or atmospheric science, consistent with the requirements set forth in a separate AMS guideline on attributes of university programs for bachelor’s degree programs in atmospheric science ([www.ametsoc.org/policy/2010degree\\_atmosphericscience\\_amsstatement.html](http://www.ametsoc.org/policy/2010degree_atmosphericscience_amsstatement.html)). The guideline says further: “There are some cases where an individual has not obtained a B.S. or higher degree in meteorology, but has met certain educational requirements and has at least three years professional experience in meteorology. Such an individual also can be referred to as a meteorologist.”

The specialized education leading to a bachelor’s degree referred to in the AMS guidelines should contain 24 hours of credit in atmospheric science plus supporting course work in mathematics, physics, and computer science. The hours in

**AFFILIATIONS:** HILL—Consulting Meteorologist, Houston, Texas; Mulvey—Northrop Grumman, Redondo Beach, California

**CORRESPONDING AUTHOR:** Jerry D. Hill, Consulting Meteorologist, 7518 Chevy Chase, Houston, TX 77063  
E-mail: [Jerryd\\_hill@sbcglobal.net](mailto:Jerryd_hill@sbcglobal.net)

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atmospheric science must be specifically related to meteorology topics. The mathematics and physics coursework should be that required for other physical science and engineering majors. The physics coursework must be calculus-based and must include a lab.

A degree in a related science with a few course hours in meteorology does not qualify one as a meteorologist under these guidelines. An example might be someone with a degree in statistics who has taken a specialty statistics course in a meteorology department or online and is working in the area of climate data analysis. The person would still be considered professionally as a statistician and not a meteorologist, even though he or she is working with meteorological data.

In a different venue, the U.S. Federal Civil Service has established a standard for classifying government employees as “meteorologists” when they hold a degree from an accredited college or university and have earned at least 24 semester hours (36 quarter hours) of credits in meteorology/atmospheric science (see [www.opm.gov/qualifications/standards/IORs/gsl300/l340.htm](http://www.opm.gov/qualifications/standards/IORs/gsl300/l340.htm)). An alternate federal standard has been established for persons who normally do important weather-related work such as performing calculations, operating specialized meteorological equipment, and making weather observations. These are people who have received technical or military training in meteorology but do not meet the academic standards to be classified as meteorologists. Under the Civil Service guidelines, they are classified as “meteorological aids” or “meteorological technicians,” but not meteorologists.

Meeting the AMS or the relevant Federal Civil Service guidelines would be considered sufficient for persons to represent themselves as meteorologists. Otherwise, it would not be illegal, but would certainly be considered unethical, to use that label for oneself professionally.


One area where some people have historically taken liberties identifying themselves as meteorologists is in the broadcasting industry. In recent years, some broadcasters have taken meteorology courses available online to become self-appointed “meteorologists.” To help deal with this trend, the AMS took steps in the public interest to create a standard for scientific training people must meet before they can be given a seal of recognition as a “Certified Broadcast Meteorologist” (CBM).

The CBM must possess a degree in atmospheric science/meteorology or have completed coursework considered equivalent to a degree in atmospheric science/meteorology. Some weathercasters who hold bachelor’s degrees in communications or related subjects may have earned additional credits in meteorology to meet the academic requirements for equivalence to a degreed meteorologist. This additional training in meteorology should also be sufficient for them to be considered as professional meteorologists and referred to as such on the air.

People considering a career in broadcasting where they might use a university’s distance learning coursework to supplement a nonmeteorology undergraduate degree in order to meet the AMS guidelines for becoming a meteorologist should examine the institution’s curriculum closely. Distance learning programs do not normally offer the opportunity to meet the AMS requirement to complete physics coursework that is calculus-based and includes a lab. Also, to earn the Society’s CBM seal requires coursework in atmospheric thermodynamics and dynamic meteorology that has calculus as a prerequisite.

In 2005, a bill was introduced in the Texas Legislature by a Dallas-area representative that would have made it a misdemeanor to call yourself a meteorologist unless you met specific academic requirements that were included in the bill. The standards used in the bill’s language were tantamount to having a four-year bachelor of science degree in meteorology and were identical to the standards for National Weather Service meteorologists. The proposal would have established the only state-set standards for meteorologists in the country. The bill’s sponsor claimed to have only one motive for the bill: the safety of the public. The sponsor said, “A very real possibility exists that some unqualified person, calling himself or herself a meteorologist, might someday misinterpret meteorological data in a weather emergency and lead the public into danger.”

The bill did not pass the Texas legislature, but caused a storm among the state’s weathercasters, some of whom did not meet the criteria set in the proposed bill but believed their experience gave them the equivalent skill of degreed meteorologists. There has been no effort to reintroduce the bill since 2005, and perhaps the establishment of the AMS’s CBM seal, also in 2005, serves as an adequate substitute. However, the public still may not be making the connection between dis-



playing the seal and the weathercaster's academic qualifications.

Representing oneself to the public as a meteorologist requires very specific qualifications. These differ slightly between the AMS definition and the Federal Civil Service definition. However, the fundamental academic requirements are nearly identical. Ethical questions arise when someone

who clearly does not meet any of the qualifications represents himself or herself as a meteorologist—for personal aggrandizement, to gain public trust, or for financial gain. At this time, there is no law in the United States that would make this a punishable offense, but it reflects adversely on the character of the person who does this or allows others to do so on their behalf.