lines for Professional Conduct (Article XII of the Constitution).

Applicants for the CCM credential can expect to find questions about the AMS ethics guidelines on the written examination, and they will also be questioned about ethics situations during their oral exam. The AMS reserves the right to suspend or revoke the privilege of CCM certification if, in the conduct of his or her profession, the certification holder clearly exhibits conduct that fails to reflect the dignity and honor of the profession, or fails repeatedly to adhere to the criteria set out for the certification.

Similarly, the Certified Broadcast Meteorologists (CBM) program establishes standards for seal holders’ conduct. The outline of the certification program says the AMS reserves the right to suspend or revoke the right to use the CBM seal if the holder, in the conduct of his or her profession, clearly fails to conduct himself or herself in a manner that reflects the dignity and honor of the profession or fails repeatedly to adhere to the criteria for the certification.

OTHER SOURCES OF GUIDELINES ON PROFESSIONAL CONDUCT. Looking beyond the AMS guidelines for personal conduct one can find much related material for scientists in general and see a variety of approaches to articulating standards of conduct. For practicing scientists, an overarching organization is the National Academy of Science (NAS), which has joined with its sister organizations, the National Academy of Engineering and the Institute of Medicine, to publish a rather definitive guide on professional standards of science. The title is On Being a Scientist: A Guide to Responsible Conduct in Research (3rd edition), published by the National Academies Press (www.nap.edu/catalog.php?record_id=12192).

While the NAS publication is directed mainly toward scientists in the research area, it has useful guidelines for the practicing meteorologist on several topics, such as intellectual property, conflicts of interest, and credit for authorship. Case studies are included that inspire thought and illustrate the many gray areas that can exist when making judgments about professional ethics. It also includes a lengthy list of additional resources that the reader may seek out.

By itself, the National Academy of Engineering has established the Center for Engineering, Ethics, and Society, which includes an online Ethics Center (www.nae.edu/26187.aspx). The online center provides readily accessible literature and information, case studies and references, and discussion groups on ethics in engineering and science. It focuses on problems that arise in the work life of engineers and scientists.

The American Academy for Advancement of Science (AAAS), publisher of the journal Science, also is very involved in ethics related to science. The academy regularly publishes its Professional Ethics Report (PER; http://shr.eas.as.org/newsletter/per/archives/newper70.shtml), which reports on news, events, activities, and resources related to professional ethics issues, with a particular focus on those professions whose members are engaged in scientific research and its applications.

Clearly, there is no shortage of ethics-related and science-oriented material available. Much can be found by searching the World Wide Web where material related to many types of businesses and professions illustrate how ethics issues arise. Whether a meteorologist is involved in research, teaching, industrial forecasting, or marketing weather services, there are many examples to be found of ethical dilemmas that can arise and where the boundaries of proper conduct may lie.

OBITUARIES

Jerry D. Mahlman, retired director of NOAA’s Geophysical Fluid Dynamics Laboratory (GFDL) and lecturer with rank of professor in the Atmospheric and Oceanic Sciences Program at Princeton University, died of complications resulting from Alzheimer’s disease on 28 November 2012 in Buffalo Grove, Illinois. Jerry joined NOAA the day the agency took birth (1 October 1970) and retired from the agency on NOAA’s 30th anniversary (1 October 2000).

Jerry was a world-renowned scientist who blazed new pathways in stratospheric modeling and was a leader in middle-atmospheric dynamics and stratospheric ozone science. He was nationally and internationally acclaimed for his lucid seminars and crisp explanations of the fundamental science of global warming. He regarded scientific rationale and integrity as virtues to uphold to the loftiest levels,
practiced this diligently and forthrightly, and communicated eloquently the significance of climate-science research outcomes for society.

Jerry was born on 21 February 1940 in Crawford, Nebraska. Growing up he explored the badlands of the Oglala National Grasslands, finding 30-million-year-old fossils of tortoises and rhinos. In high school, he played golf on the buffalo grass courses of the high plains and held the school record in pole vaulting. Through his work at Fort Robinson State Park and as a minority to his Lakota Sioux teammates on the basketball team, Jerry developed a strong sense of the role of racial and ethnic discrimination in our society. After graduating from high school, Jerry attended Chadron State College, less than 25 miles from his home.

In 1962, Jerry graduated from Chadron State and married Janet Hilgenberg of Hot Springs, South Dakota. They moved to Fort Collins, Colorado, where Jerry’s advisor was Elmar Reiter. Jerry’s early work was on the transport of radioactive carbon following nuclear detonations. After receiving his doctorate in 1967, Jerry and Janet moved to Monterey, California, where he was on the faculty of the U.S. Naval Postgraduate School. Jerry maintained his interest in his natural surroundings and its historical context, calling the nearby Point Lobos State Natural Preserve the most beautiful spot on Earth. Jerry’s interest in the Earth’s natural environment, his respect for humanity and humanity’s role in the environment, and his commitment and adherence to science-based understanding of the world followed him throughout his career.

Jerry was exposed in 1969 to the research of GFDL at a conference in London. After that meeting, GFDL Director Joe Smagorinsky offered Mahlman a position. Though having just received tenure in Monterey, Mahlman gave up his tenure and with Janet and two children moved to Princeton, New Jersey. Jerry counted Smagorinsky as a mentor in scientific leadership, and in 1984 Mahlman assumed the directorship of GFDL.

Jerry’s research at GFDL was comprehensive, concentrating on a synthesis of the information obtained through study of tracer transport, radiative forcing, and wave–mean-flow interaction. Jerry’s contributions from this time stand as part of the revelation that heat and momentum transport by waves at many spatial and temporal scales keep the atmosphere away from radiative equilibrium. Ultimately, it was evident that the mean circulation as defined by conventional longitudinal averaging was more an artifact of the averaging than a physical representation of atmospheric transport. His colleagues at this time—Chip Levy, Dan Schwartzkopf, and Steve Fels—brought together expertise on dynamics, radiation, chemistry, and numerical simulation in unique ways. His work with Alan Plumb provided powerful interpretive tools by combining theoretical and computational science.

Jerry’s initial work on climate started with the Climatic Impact Assessment Program in the early 1970s. This program investigated the role of high-altitude aircraft on both the climate and the photochemistry of ozone. By the late 1980s, he began to focus on the warming associated with increasing greenhouse gases. As revealed in many interviews and congressional testimony, Mahlman viewed that the 1979 National Research Council “Charney Report” had established the importance of greenhouse gas warming and its societal impacts. Mahlman stepped prominently into the global warming discussion and argued that the information from numerical simulations justified policy response.

Jerry was an early and outstanding spokesperson on climate change in the 1980s and 1990s. He testified clearly and without equivocation on the societal imperative to take action on climate change. He was adept in the communication of climate science and coined the term “hockey stick” to describe the unprecedented warming of the Northern Hemisphere that had started in the twentieth century. He was one of the first to introduce the notion of simplifying the complexity of understanding human-caused climate warming in terms of readily understood “odds,” breaking down the climate problem and analyzing each step in terms of uncertainties. This has proved an effective way to represent to general audiences the certainty and uncertainties of climate change science.
As important as his scientific testimony was Mahlman’s role as a protector of the integrity of science-based investigation and the scientific community. He fearlessly pushed back against political interference in the dissemination of peer-reviewed scientific results. His prominent role in congressional testimony, his defense of the honest representation of climate science, and his countering of the spurious arguments offered in opposition to the need for a policy response to anthropogenic climate change were the highlights of the final 10 years of Mahlman’s time at GFDL.

Jerry fervently believed in nurturing creative, talented minds. Several young scientists, hired during his tenure as GFDL’s director, are now full-fledged senior scientists at the institution that he cherished deeply, fulfilling the promise he saw in them of leading the institution in cutting-edge science in the future. His tenure as director also saw new vistas of atmospheric and oceanic sciences, and newer climate modeling strategies that have now crystallized into pioneering research.

Mahlman retired at 60. He had practiced Smagorinsky’s counsel to pursue the development of institutional-scale science, rather than perpetuating, exclusively, the practice of the single scientist with an isolated group of students, postdocs, and associates. After retirement, Mahlman was affiliated with the National Center for Atmospheric Research (NCAR) and continued to work at the nexus of climate science, communication, and policy. He also advocated for more integrated efforts across institutions. Mahlman always felt that, as a whole, our field was underinvested in observation-based diagnostics of model results. Citing what he saw as the great success of the emergence of modeling frameworks at NCAR and GFDL, Jerry wanted to see the emergence of similar framework-like approaches for community-organized diagnostics and the investigation of climate change impacts.

When he retired in 2000, the symposium held in his honor recognized and acclaimed his two greatest contributions: “Understanding the stratosphere: Challenges and opportunities” and “Beyond the science of global warming.” In honor of his tenure at GFDL and leadership as the second director of the laboratory, in May 2010 GFDL named its newly renovated lobby the “Jerry D. Mahlman lobby.” Neither Jerry nor Janet could come for the dedication event, and their daughter, Julie, attended on their behalf. Jerry and Janet were able to watch a recording of the event, which they greatly relished.

In 2001, the Mahlman family moved to Longmont, Colorado. Jerry loved to “bushwhack” across desolate places. In 2008, Jerry and Richard Rood set off with the noble goal of obtaining large round rocks spewed from the Capulin Volcano. After collecting the volcanic rocks from a farmer’s field, they traveled through the dirt roads of northern New Mexico and southeastern Colorado. Driving the entire length of the Dry Cimarron River, wandering onto roadside rock crumbles and into easy gullies, the car was filled with rocks, big and small, including bright red “five-billion”-year-old sandstone. There were stops at dimly lit, small-town museums housed in repurposed general stores and gas stations. And there in the barren grasslands of south-central Colorado, with clumps of returning buffalo grass, ruins of sandstone schools and long-abandoned windmills, and encroaching cholla cactus, was Colorado Highway 71, which runs north into Nebraska to Jerry’s hometown of Crawford, and beyond to Janet’s hometown of Hot Springs, South Dakota.

Jerry Mahlman received the U.S. Department of Commerce Gold Medal in 1986, the American Geophysical Union (AGU) First Annual Jule G. Charney Lecturer Award in 1993, the Presidential Distinguished Rank Award in 1994, and the highest honor given by AMS—the Carl-Gustaf Rossby Research Medal—in 1994. He was a fellow of the AGU and the AMS.

His wife Janet preceded Jerry in death, succumbing to multiple myeloma on 2 January 2012. Jerry and Janet are survived by their daughter, Julie, and son, Gary.

Jerry was never one to shy away from confronting realities—for example, his uncomplicated view that one can’t wait for predictive uncertainty about climate change to go away. He testified that the viable policy options to address climate change are “very straightforward but dauntingly difficult in their application.” Though the challenge was huge, he maintained that if we continue to deny the severity of the consequences of climate change and do not use the knowledge provided to us by the scientific investigation of our climate, “historians of science will be brutal on us.”

—Richard B. Rood, V. Ramaswamy, and Rosina M. Bierbaum