

Tribute to Dr. Marvin Wesely



One person can make a difference, a world of difference, especially if that person is in a leadership position, at the right place and at the right time. Marv Wesely, leader of the Atmospheric Research Section at Argonne National Laboratory's Division of Environmental Research, was such an individual, such a towering figure.

Marv began his career at Argonne in 1973 when the role of the National Laboratory was changing from promoting nuclear energy to establishing an environmental research program and monitoring weather in preparation for the unlikely event of a radioactive release. Throughout his 30-yr career, Marv focused on experimental and theoretical studies related to surface–atmosphere exchange of heat, energy, and mass. Marv pioneered methods for measuring fluxes of various chemical species related to air pollution of all kinds. In 1981, he became Head of the Atmospheric Research Section where he served until his untimely death in 2003.

His outstanding accomplishments and his unrelenting commitment to excellence established his colossal stature within the Atmospheric Science Section at ANL. He led by example with leadership qualities that projected both enthusiasm and commitment, so that individual scientists in his research group realized that they themselves could excel as well. Marv's early roots in rural Nebraska gave him a strong sense of integrity, a profound respect for people and the environment, and nurtured his natural interest in the weather.

Over the course of his career, he took on important responsibilities. He was the leader of the Instrument Team in the Atmospheric Radiation Measurement (ARM) Program overseeing the various groups working with instrumentation in the single largest meteorological program in DOE's history. He was a leader in the organization of field measurement projects, i.e. the Atmospheric Boundary Layer Experiments (ABLE) and the Cooperative Atmosphere–Surface Exchange Study (CASES) in the Walnut River watershed in Kansas. He also was instrumental in the design and execution of the Turbidity Network throughout the U.S. In addition to the above, he was Chief Scientist in the Atmospheric Chemistry Program of DOE and Leader of the Atmospheric Research Section at Argonne. Furthermore, he had also been recently appointed Editor of the *Journal of Applied Meteorology*.

In spite of the fact that he served in many administrative roles, Marv was a reluctant leader. He was a scientist at heart, not an administrator. His list of seventy refereed publications in 16 different journals and his 150 total publications with over 4 dozens of his colleagues shows his continued interest in being involved in “hands-on” science, despite the increasing administrative demands. Clearly, he remained involved in the research life of the Section as demonstrated by the seventeen publications in the last three years of his

career. His career success was recognized earlier by a Distinguished Performance Award in 1987 and an Exceptional Performance Award in 1995.

The work that George Thurtell and Marv Wesely did on the development of the eddy-covariance flux measurement technique in the 1960s was seminal and paved the way for much of modern micrometeorological research. At that time, this technique was new and the meteorology community was just beginning to learn about it. Marv's first refereed publication in 1970 was on a fast-response thermometer for sensible heat flux measurements, using the eddy-covariance technique.

The success of the leadership style that Marv Wesely established over his 30 years at Argonne may be rooted in his formidable reputation as an authority in the field of atmosphere–surface exchange using the eddy-covariance technique. The name “Wesely” has become synonymous with dry deposition measurements of various constituents over natural surfaces, i.e. sulfate, sulfur dioxide, ozone, oxides of nitrogen, exotic organics and of course, the more common exchanges of heat, water, carbon dioxide, and momentum. His work in dry deposition is so well known that his air–surface exchange formulations have been adopted by virtually all air pollution modeling efforts in the U.S., Canada, Australia and Europe. Marv developed the dry deposition modules for various regional transport models, including the parameterizations of sub-grid scale surface fluxes (PASS model) and the regional acid deposition model (RADM model), thus, succeeding in translating more basic knowledge into valuable predictive assessment tools. About 70% of Marv's publications are in the area of turbulence and dry deposition, in addition to which he also made contributions in the fields of radiation, turbidity, atmospheric sounding, atmospheric chemistry, remote sensing and water quality.

Marv Wesely was a giant at Argonne, having been recently promoted to the highest Senior Scientist level (only 10 at ANL at the time of his death); however, he was human too. He was a quiet, soft spoken, and genuinely humble person who rarely put himself “center stage”. At home, he loved to play the guitar, sing folk songs, and maintained a large vegetable garden.

Marv's colleagues in the Atmospheric Research Section felt deeply indebted to him for his positive influence on their career in both personal and

professional ways. As a leader, he supported those in the Section by giving them intellectual freedom and using his reputation to open up opportunities for others, but he had a wider influence on atmospheric science in DOE. The National Laboratories of DOE tend to emphasize “facilities”. As such, this infrastructure permits scientists elsewhere to make significant advances. Marv was a strong, apolitical voice for also doing rational and sound science with those facilities; as such, his influence provided greater scientific opportunities for those in the Section and improved the value of facilities. The ARM program is a case in point. His unique ability to pressure a reluctant DOE power structure to do more science is one of the traits that make him exceedingly difficult to replace.

Marv was a long-time member of several professional societies including the American Meteorological Society (AMS), the American Geophysical Union, the American Society of Agronomy, American Association for the Advancement of Science, the Royal Meteorological Society, the Scientific Research Society of North America and Sigma Xi. He was particularly active in the AMS, having served for 6 years on the Committee on Measurements with the final 3 years as its Chair (1996–1998) and Editor of the *Journal of Applied Meteorology* (2000–2003).

To the credit of the AMS and Marv's colleague Jeff Gaffney, the AMS has established the Marvin L. Wesely Student Travel Fund for assisting undergraduate students with travel costs to attend AMS scientific meetings. Contributions to the Marvin L. Wesely Student Travel Fund can be made to the American Meteorological Society, Attn: AMS Development Office, 45 Beacon Street, Boston, MA 02108–3693, USA. Marv believed that the AMS meetings were one of the best motivators for getting undergraduates excited about atmospheric science.

If one measure of a meaningful and productive life is how much someone is missed when they are gone, then Marv Wesely certainly “hit the mark”. His youngest daughter said it best, “my father's death was truly a tragedy, but his life was certainly not.”

John Norman, Monique Y. Leclerc, Andy Black
Guest Editors

10 December 2003