



## **Teaching Weather, Ocean, and Climate Science through American Meteorological Society Online Resources**

Michael Passow (1), Wendy Abshire (2), Chad Kauffman (3), Elizabeth Mills (2), and Abigail Stimach (2)

(1) Lamont-Doherty Earth Observatory, Columbia University, Palisades, New York, United States (michael@earth2class.org),  
(2) American Meteorological Society Educational Program, Washington, DC, United States, (3) California University of Pennsylvania, California, PA, United States

Providing teachers and students with scientifically accurate weather and related science concepts has been a goal of the American Meteorological Society's Educational Program for nearly thirty years. "Training the trainers" has been the key strategy—giving teachers trusted information and useful resources that they can adapt for their classroom at elementary, secondary, and college levels. In the beginning, AMS provided instruction about specific topics (such as high- and low-pressure systems, clouds, and El Niño) through one-shot teacher workshops using print workbooks. These were presented by "Atmospheric Education Resource Agents," classroom educators from across the US who had attended AMS summer programs.

Delivery methods and total approaches changed vastly with the beginnings of the Internet in the mid-1990s. AMS developed, and continues to offer, courses that combine print, web-based, and in-person resources to provide high-quality professional development. Scientists and educators lead "DataStreme" courses to enrich teacher understanding of about the Atmosphere, Ocean, and Earth's Climate System. Participants in "DataStreme" courses read textbook chapters, completed activities in "investigation manuals," and explored "Current Studies" weekly. In the past, they sent their responses to their "Local Implementation Team" mentors for feedback. Completion of each course earned 3 graduate credits from the State University of New York at Brockport. Grants and other funding support enabled teachers to take these courses and receive credits at no cost. Over 21,000 teachers have participated in DataStreme courses over the past 25 years. Similar courses were developed for colleges to expand their atmospheric, ocean, and climate science offering without adding new faculty. This program has activated about 900 institutional licenses since 1999. Web portals in each topic area provide a vast array of resources and real-time data that can be used by teachers and students at all levels.

In the past few years, programmatic evolution has resulted in shifting to primarily online formats for DataStreme courses. A new partnership with California University of Pennsylvania continues the capability to offer graduate credits for course completion at reduced cost. In addition, participants can now also use these courses to complete programs leading to an AMS DataStreme Certificate and/or Master of Education degree (Educational Leadership: Weather and Climatology). We will share more information about these programs, web-based resources, and how these support weather, ocean, and climate science education in the US.