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1. INTRODUCTION

“Water in the Earth Systems” (WES) is the new distance-learning project from the American Meteorological Society Education Program. During the 2001 fall semester, WES began national implementation. The authors comprise the Local Implementation Team (LIT) serving New Jersey—“The Garden State”—and New York—“The Empire State.” Our poster presents highlights from this inaugural offering, along with brief descriptions of related activities.

2. OFFERING WES TO NJ AND NY

2.1 The Structure of WES

Information about the “Water in the Earth System” program is provided in accompanying posters and oral presentations in this Symposium, so we will confine remarks here to a general description of the structure of WES and our NJ/NY LIT arrangements.

WES uses the global water cycle to help teachers—and through them, students—understand more about the flow of matter and energy in the Earth systems. Another key theme is to explore the human/societal impacts on and response to interactions between the hydrosphere, atmosphere, lithosphere, and biosphere.

To accomplish this, the AMS Education Program has created a semester-long program that incorporates written and one-line information and activities, along with several group meetings and weekly mentoring by the LIT members.

As in other states, teachers in New Jersey-The Garden State and New York-The Empire State are strongly influenced by recently-adopted State curriculum guideline and standardized assessments. Efforts must be made to assist participants in incorporating WES concepts and activities into student-oriented investigations that

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foster mastery of their state core concepts, while developing necessary process skills. Examples of how we encouraged such local adaptation are included in the poster

2.2 Recruiting Participants

Our LIT serves teachers in one of the largest population centers of the country, the New York City metropolitan area. There are more than twenty-five counties in two states within a radius of 100 kilometers of our meeting location. Since WES participants are expected to serve as a Peer Trainers after completing the program, one of our goals is to select participants from as wide a geographic distribution as possible so as to reach as many additional teachers in our area. A map in our poster indicates the counties served by our initial group, and also those selected for the second term.

Our region includes several large school districts with high numbers of students from groups underrepresented in the geosciences, so we are making a special effort to recruit teachers from these areas. By this, we are cooperating with AMS and other organizations seeking to reach more students from such groups and share a better understanding of the Earth System.

2.3 Facilities and LIT Meetings

Kean University was selected because it is reasonably central to teachers who must travel from all directions in our region. Dr. Charles Murphy of our LIT team is Chairman of the Department of Geology and Meteorology at Kean. WES group meetings were held in the department's computer laboratory, so that we were able to demonstrate to participants how to obtain the on-line components of the program. We were also able to show them additional useful resources.

WES began with a “Preview Week on 3 Sep, with the first week of the course officially starting 10 Sep. The Preview Week was the first week back in school for most of our participants, so we held our first group meeting on 10 Sep.

At this meeting, we distributed the course materials provided by the AMS Education Program. These included the course textbook, *Water in the Earth System* (American Meteorological Society Education Program, Washington DC, 2001. ISBN 1-878220-40-3.) Participants also received the *WES Study Guide*. This is a large loose-leaf binder that contains the “Chapter Progress Questions Response Form,” the first part of each of the two weekly activities, and other pertinent materials.

Each week, participants read through the information in the textbook. They downloaded the information and activities presented on-line through the WES course page (<http://www.ametsoc.org/amsedu/WES/home.html>). After completing the activities, they faxed or e-mailed their answers to their LIT mentor, who provided feedback about their progress.

During the “mid-course” meeting on 4 Oct, participants discussed their progress to date. They also were able to work together through the “Supercooling Water” activities in WES Benchmark Investigation 5a to model how some clouds form. The poster provides images from some of their efforts.

The final group meeting, held on 6 Dec, provided participants with the opportunity to provide feedback and to begin planning for their own outreach efforts. Successful completion of the program earned 3 graduate credits through the State University of New York—Brockport. For some of our participants, new state requirements for a certain number of “professional development hours” were satisfied by participation, as Dr. Passow is a “registered provider” for the State of New Jersey.

The second semester of WES begins 28 Jan. Recruiting efforts before and during the fall semester has produced the complete class for this term.

3. “WANDERING THROUGH OUR WATERSHEDS” and OTHER EXTENSION OPPORTUNITIES

In conjunction with the New Jersey Earth Science Teachers Association and the Delaware and Hudson Kayak and Canoe Club, WES participants and other teachers were invited to explore area watersheds from an unusual perspective: a series of

paddling trips on waterways in the region. These “Wanderings through Our Watersheds” expanded content knowledge, enhanced interest, and developed classroom activities utilizing some of the WES resources. Of particular value were some of the on-line resources available in the “Terrestrial Information” section of the WES course pages. Examples of these activities and pictures from these trips are included in the poster.

Other educational opportunities available to participants included the Annual Open House at the Lamont-Doherty Earth Observatory of Columbia University, Palisades NY, on 6 Oct. The theme of this year’s program was the Hudson River. Of special interest to WES were exhibits about investigations into Hudson River ecosystem, climate change, and the “global ocean conveyor belt.” The Open House exhibits reinforced the underlying theme of WES of important connections between studies of the local environment and such broader global issues as the impact of human activities on Earth’s ecosystems.

Among other plans for extension activities is a “Eco-Boat Tour” around New York harbor on the Circle Line. This has been an effective way to spotlight the region’s natural resources at several recent professional conferences and graduate courses.

4. PLANS FOR OUTREACH OPPORTUNITIES

Members of the Local Implementation Team and course participants plan to reach other teachers through a variety of professional development opportunities. These include workshop presentations at regional, state, and national conferences. One reason for selecting participants is their active involvement in teacher organizations. Some will contribute articles to organization newsletters and electronic list-servers.

We are encouraged that “Water in the Earth Systems” will continue to flourish in the Garden State and expand in the Empire State.