

## P1.25                      TEACHING      HIGH      SCHOOL      METEOROLOGY      THROUGH LIVE EVENT LEARNING

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### 1. INTRODUCTION

The National Science Standards are encouraging educators to be innovative, while being creative, to develop "live event learning" experiences for students. Research shows that as students participate in live events, the learning embedded within these events is internalized at a significantly higher rate and with substantially more retention than with traditional learning and teaching methods. This type of learning allows students to recognize the importance of what they learn as they apply it to real life situations.

With the help of the AMS, NWS-Norman, OK., NSSL-Norman, OK, SPC and Oklahoma University, I have developed a field experience that converts the "sluggish" idea that students may have about science into "pulse quickening" experiences that will create life long learning. The field experience is a 5 day workshop that focuses on the major components that make up the prediction, research and study of severe weather in the Central Great Plains.

### 2. PROGRAM

This field experience is part of a high school meteorology course that was started in 1994. The actual birth of the field experience stems from my AMS-Project Atmosphere experience in Kansas City, MO in the summer of 1997. With the help of Dr. Ira Geer and Dr. Robert Weinbeck, I was introduced to Dr. Joseph Schaefer. Dr. Schaefer, the director of the Storm Prediction Center, invited my class from Minnesota to visit them for an educational tour.

From that initial invitation, the field experience has evolved into a live event learning experience unmatched by any other field experience for high school students.

The field experience is a hands-on, minds-on learning experience that follows an eighteen

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week intense study of the atmospheric sciences. In conjunction with the major components that make up the prediction, research and study of severe weather in the Central Great Plains, the students produce a final project by means of a presentation that is based upon their experience during the field experience.

### 3. EVOLUTION

The field experience started in the beginning as an educational tour and program put on by the Storm Prediction Center and the National Severe Storms Laboratory located in Norman, Oklahoma. Presentations from Dr. Howard Bluestein and seminars from various other "experts" in the field of severe weather research and detection at Oklahoma University usually followed the tours.

This program has now evolved into an intense five day research and seminar that includes input from many different groups associated with weather research and detection. The most recent inclusion to the field study is the actual "hands on" experience with the Doppler on Wheels (DOW) crew, directed by Dr. Joshua Wurman of Oklahoma University.

Dr. Wurman has allowed my class to track storms with his crew during actual weather events. The students are able to view current doppler radar images as well as take part in the "pre-tracking" meeting that occurs before any "rubber hits the pavement."

To date, we have had one very successful deployment with the DOW, which occurred on May 3, 1999. This proved to be one of the greatest tornadic outbreaks in Oklahoma's history. On this particular event, my students witnessed more than twenty-five tornadoes in a 5 hour period and took an active role in the research during this event. Over the past several years, other groups have been able to witness other tornadoes and severe storms. Though these events are of lesser magnitude than the May 3rd event, the live event experience has been quite exciting and "pulse-quickening" to say the least.

#### **4. IMPACT**

The student's perspective of "applied science" is usually slighted, unfortunately, it isn't in the favor of science. With exciting programs and intense hands-on, minds-on experiences, the students are looking at "applied sciences" in a different light. The value of live event learning is unmatched as an educational experience. Students are able to apply what they have learned in the classroom to actual research in the field.

In the beginning, ten to twelve students would register for meteorology. Now, the course fills up to twenty-five students in a minimal amount of time. Currently, I have 10 former students that are actively pursuing a career in the field of atmospheric science and countless others in some other science related fields.

#### **5. CONCLUSION**

The problem that many of us in education face is making what we teach relevant to student's lives. When we can apply what we teach to something the students can experience, the learning will last a lifetime. The hope is to generate the "spark" that will initiate an interest that may eventually lead to a successful career.

This field experience creates a win-win situation for the students and the sciences abroad. The students win by learning more than they imagined and creating within themselves the desire to learn more. The students are able to accomplish this by actually creating their own "student lead" research and discovery project. This same experience could not be matched within the confines of any classroom.

Science wins because more students are willing to accept the challenges that it poses, which in turn, aids in solving problems that constantly plague our society. With the never ending advancements in technology, the field of science requires people who can continually take on the demanding tasks of solving these problems.

The National Science Standards are put into place to make students more active in their own learning. With the help of Dr. Ira Geer, Dr. Robert Weinbeck, Dr. Joseph Schaefer, Dr. Howard Bluestein, Dr. Joshua Wurman, and countless others, this task is being accomplished.