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1. INTRODUCTION

The Weather Investigators of Northeast Louisiana camp was held from July 6 thru July 11, 2003. The camp was for “at-risk” 7th graders and consisted of six participants from either the Lake Providence or Winnsboro area in Louisiana. Two undergraduate meteorology majors were selected through an application and interview process by the Project Director to assist in helping the participants succeed in the program. As part of their efforts, it was expected that the meteorology students would be gaining valuable experiences in mentoring and have an opportunity for professional development prior to their graduation.

The meteorology students welcomed “campers” on Sunday, July 6th, assisted their move-in and key process for the dormitory rooms, and provided name tags. A representative from the University provided the participants a tour of the campus and a “goody” bag. That night, the staff and participants had a barbeque along the bayou. Good food and good times were had by all. By the end of the day, they were ready for bed. Each day it was their responsibility to ensure that the participants were prepared and ready to “go” each morning and for all activities. This included helping them with the use of computers, lunch breaks, after-hours activities, and supervision.

As the week progressed, the meteorology students remained alongside the campers as they ate, worked on various small projects, and during social events. They were able to assist the participants with almost any question they had and provide insight as to the nature of what college life is like. However, the camp was not entirely work projects. The meteorology majors accompanied the participants to the Activity Center to play basketball, badminton, racquetball, and other activities. The majors also talked and played cards with participants during free time hours. This rapport was important to their successful completion of the summer program.

2. PROGRAM ELEMENTS

During the camp, the participants learned basic concepts of weather and the techniques in which they can analyze the weather on their own. This was accomplished by means of various lectures, presentations, and field work. The lectures and presentations were the manner in which the participants were introduced to basic or fundamental information. This was useful for when they went into the field to place instrumentation and had to apply their knowledge.

Concepts of mathematics also played an integral part in this camp. The participants were exposed to statistics and how using graphs makes it easier to represent and analyze data. They did most of their graphing work using Microsoft Excel. Their field work consisted of the use of HOBO sensors. The participants had to pick several locations on campus to place their sensors based on their recently gained knowledge. The counselors’ role in this was to push the students to think on more of a scientific level.

The meteorology students had to question their motives on where they would place their sensors, why they decided to place them there, and also how they were going to place them in order to record the best data. Once the data was collected over a time period, they retrieved the sensors and the data was downloaded to a computer. Their job was then to sort through the data and pick out what they needed in order to document the data in the form a graph.

This is when the participants were able to put to use their knowledge of statistics and Excel. The staff did assist the students during this time because for most of the participants this was their first time using Excel. In addition, they needed to make judgments of the data’s quality and completeness as well as the appropriate portion of data to use. This was critical in defining their results of what the data indicated and why the data ‘behaved’ the way it did.

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The participants also had the opportunity to work with TI-73 Explorer Calculators purchased for the project. The intent was to allow them use of another technology that could achieve a smaller-scale version of their data analysis. For many of the participants it was the first time they had used such a high-level tool. With instruction by the mathematics faculty member, and the assistance of the undergraduate meteorology majors, they became adept at performing basic data entry, simple statistics calculation (mean, median, mode, similar), and basic data plotting.

The participants also spent some time outdoors, including on the rooftop to observe real-time cloud and thunderstorm development (in the distance). These were tied to their observation of clouds and rainfall as depicted by satellite and radar platforms as accessed in the computer laboratory. In addition, they took turns both inside and out in order to observe and measure the time-lag response of their HOBO sensors to temperature and humidity changes. The participants were also able to visually examine the time-lag relationship.

In addition to these, the participants also were able to interact with two other meteorology majors (Scott Blair and Patrick Pyle) who presented material on their summer research project (COMET Partners Project, see acknowledgements). They provided the 7th graders with information on thunderstorms, lightning, hail, and tornadoes and also spoke directly about their microburst project work. The 7th graders also were visited by several of the local media (television and newspaper) and asked to comment on their experiences. They were excited to see themselves on-air and at the opportunity to interact with other professionals.

3. MENTORING ROLES

Throughout the camp, the meteorology students were involved in every aspect of the students' time at camp. They shared the same dormitory, meals, and evening social activity. This provided ample time for both group and individual mentoring, whether it was a one-on-one conversation at dinner or a group discussion. All of these aspects of the camp provided the students with a true college experience.

In particular, the undergraduate majors provided specific examples of college students, science majors, college life and expectations, and true life experiences. These allow for broadening of

perspective of all participants with regard to professionals from a variety of fields and at various levels of professional development and career status.

Through the duration of camp, the students stayed in a university dormitory, while also eating all of their meals in a university cafeteria. On two of the nights, the university hosted a cook-out, which allowed the students to meet and talk with other university staff. Most of this time in the dorms and eating was strictly social and therefore participants were able to interact with each other, along with the staff on a purely social level. This also provided them with another aspect of college, meeting new people from many different backgrounds.

They did have to spend a little academic time in the dorms. Every night the undergraduate students would conduct a brief weather map discussion, relating the current weather to what the students were learning during the day. In the evening the participants had a break from the day's busy academic schedule. The entire group, including the counselors, participated in activities at the ULM Activity Center. These activities ranged from playing basketball to walking on the track and working in the weight room. This provided a much needed outlet for the students from the day's academic work. They could have some alone time, such as walking the track, or play in group activity.

4. MENTORING EXPERIENCES

The camp was a wonderful learning experience, not just for the participants, but also for the staff. The students learned information that they will be able to use throughout their future studies, such as spreadsheet techniques. They also were able to experience the college setting and perhaps decide that it is something they want to do when they get to that point in their life. The staff learned how to deal with many different personalities and make all of those personalities come together – particularly when activities consisted of group projects or presentations.

In the process and for the duration of the weather camp, the mentors not only had to cope with these personalities but also with any situations that developed. As expected with the 7th grade level, maturity was an issue – but was not of significant impact given the close monitoring and assistance provided by the staff. The weather camp thus provided many varied and important opportunities for the undergraduate students useful to their own professional development. The leadership skills, and the ability to translate this into end-products made by

the 7th graders, give the mentors material for their own portfolio and the opportunity to present it.

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