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Summary of Team:

I worked for LEO, Lehigh Earth Observatory a multidisciplinary program. My internship involved working with the College of Education at Lehigh University. I am a first year graduate student at Lehigh University and I am one out of the many LEO interns that are involved in LEO. My team included Il-bong Kang, and Veronica Vollmer, and I. Dr. Al Bodzin was our Faculty Mentor for the K-12 Project. Our goal was to create a comprehensive and informative LEO inquiry web site designed for grades K-12. Students in grades K-12 are encouraged to be active learners by performing hands on water quality tests, collect data, and analyze data. Another goal is to engage the students in interdisciplinary science curriculum that emphasizes scientific inquiry of their local watershed by providing a site that delivers content and scientific concepts, visual and auditory tools, and instructions.

Job Description:

- Writing content such as background information on variables that affect water quality measurements. For example, a variable such as Ammonium Nitrogen concentration would include information such as: What is Ammonium Nitrogen? What factors influence the amount of ammonium nitrogen in your watershed? What is the optimal amount of ammonium nitrogen in a watershed? What factors are affected by the amount of ammonium nitrogen in a watershed? Knowing these variables will also help them to understand what factors are negatively affecting the water quality and to think of ways to ameliorate the problem.

- Using the digital camera to take stills, mpegs, and panoramic pictures to post on our site so that students may access our watershed without ever setting foot near the Lehigh River.
- Creating and providing access to online tutorials on our site so that students and teachers can perform water quality testing from easy-to-use directions on how to use the Venier Probes, LaMotte Kits, and the Hydrolab's Hydroprobe. This way, we encourage students to go outside to their own watershed and collect water samples and perform their own water tests. Hands on learning will encourage students to become scientists by going through the scientific method, instead of memorizing facts from a book. Teachers and students will achieve good results if they follow calibration instructions and other quality control measures that might affect the results.
- We also developed an online tutorial on how to use the Geo Explorer GPS and the Blazer GPS. The instructions are easy to read so that teachers and students can record their latitudinal and longitudinal position at every point they take a picture or perform a water quality test. Our team took GPS readings every time we took a picture and performed water quality tests.
- We visited important sites along Lehigh River from the Francis E. Walter Dam, Rockport, Jim Thorpe, Palmerton, Walnutport, Catasqua, and where the Lehigh River meets the Delaware River. This service was provided through the hospitality of Wildlands Conservancy's sojourn down the Lehigh River on rafts and canoes.
- We took water quality samples and tested for pH, turbidity, dissolved oxygen, nitrate, ammonium, chloride, calcium, phosphate levels, alkalinity, temperature, and conductivity to assess the overall quality of the watershed and how it changes along different areas along the watershed. The data collected will be put on a table so that students can analyze and compare our results and formulate educated conclusions. Students will formulate inquiring questions to think of what factors affected the water quality.

- Our site will also include the watershed in a historical perspective. It will answer questions such as: What was the Lehigh River used for during the Industrial Revolution? How has the use of canals affected the overall water quality? How and when did the shad population in the Lehigh River recover? What will our watershed be like in the future? An online timeline will also be included on this site so that students can see what life was like at during a certain period of time that they choose.
- We contacted people who are experts or who are able to just talk about their experience growing up around the Lehigh River or the Lehigh Canal. Some examples of interviewees were Lance Metz, Sue Pridemore, Tom Gettings and Chris Kocher from the Wildlands Conservancy, Everett Kaul from the Walnutport Canal, and representatives from Bethlehem Works. We would then interview these people and store it on a digital video camera. Eventually, we would put it on our site so that students could access video clips and see the Lehigh watershed through different perspectives and biases. The students' job is to formulate their opinion and facts from the background information and water quality data provided on the site and from the video clips. Many interviewees generously allowed us to borrow historic and recent pictures and slides. We scanned the pictures and slides so that students will be able to view them on our site.