



## 2013 CCE Summer Internships

CATEGORY ARCHIVES: 4-H YOUTH GEOSPATIAL SCIENCE: COUNTY STEM CONNECTIONS

### Week 9 : Bristol Hills or Bust!

Posted on **August 9, 2013** by [rkh64@cornell.edu](mailto:rkh64@cornell.edu)

This week, besides working from home on various projects, I had the opportunity to visit Jim Hooper at the Bristol Hills 4-H camp. In the morning, Jim and I observed four different 40 minute classes. Bottle Rocketry was the first class that I got to sit in on and the kids were really excited to launch 2-liter soda bottles filled with water into the air using a tire pump and a 'launch pad' of sorts. In this class, I really saw scientific inquiry at work as the students varied the amount of water they put in the bottle to see how it affected the height the bottle achieved once launched. Next, I went to geocaching class. In this period, I followed about ten students around as they scoured the Bristol Hills campus for some beginner's geocaches. The kids also were very excited about this activity and seemed very pleased with themselves each time that they found the hidden treasure. Jim mentioned to me that the geocaching class has seen a rise in popularity in the recent years which is great in terms of exposing kids to geospatial science. As expected, the children were able to use the GPS units quite well after only brief instruction from the counselors. After geocaching, we went to Animal Care. The 4-H camp houses chickens, rabbits, and a chinchilla, turtle, and snake (though not all in the same cage). During this segment, the students helped to clean the rabbit cages, feed the rabbits, and then take them out in their 'rabbit pools' to play. (On a random note, Jim let me hold the pet snake that he donates to the camp every summer. It was exciting for me because snakes are illegal in Hawai'i it was only the second time I've ever touched one!

Finally, the last class that I attended was called service. I was thrilled to hear that this week's service project was directly related to geospatial science! The campers were actually creating a new map of camp to be displayed on their main camp building. Today I was able to observe the kids using remote sensing technologies as they projected various maps onto a board to trace the location of all of the buildings at camp. I really enjoyed seeing how Jim and the counselors at camp were able to apply geospatial science in a service related project. I hope that it inspired the students who were working on the project to think of all the ways that maps can help everyone. After classes, Jim gave me a tour of the campgrounds and told me about the ups and downs of running a 4-H camp. One thing I really like about 4-H Bristol Hills is the wide variety of classes offered each summer. Each camper can pick from over

twenty classes! Overall it was a great and beautiful day at camp and I'm grateful to Jim for letting me watch kids get excited about science!

I am taking the next two weeks off to visit with family but when I come back it's STATE FAIR time!

Until then,

Rain



— Students using remote sensing to create their service map project.

Posted in **4-H Youth Geospatial Science: County STEM Connections**

## Week 8 : ABC...MST...

Posted on **August 9, 2013** by [rkh64@cornell.edu](mailto:rkh64@cornell.edu)

This week I spent my time in Genesee County at an MST camp. What is MST you may wonder? It stands for Math, Science and Technology. MST camps serve to excite children about the many facets of....you guessed it ...Math, Science, and Technology! On my first day, I met the camp at the Genesee County Airport where the kids attended a 'flight school' where they learned about aerodynamics. They also were given tours of hangars at the airport and got a visit from a professional racecar driver. After lunch, we went back to Genesee Community College, where the rest of the camp took place, to chart data, make ice cream, and race CO2 cars. The first day really showed me how excited the kids were getting about science without the normal constraints of a classroom setting. The next day the students went on a field trip to a farm that uses robotics to milk dairy cows and then to a tractor dealer to learn about precision agriculture. Next, Time Warner Cable set up a really fun afternoon for the kids with various activities to rotate through. Chip was really inspired by the Twister like game that they brought for the children to play. The kids were lucky to get the opportunity to learn the science aspects of the services that Time Warner Cable provides. Finally, Thursday was GEOSPATIAL day! Susan came up from Ithaca to help lead the camp. After an introduction to geospatial science, the Landsat program, and Adopt A Pixel, the kids paired up and roamed the GCC campus to collect data for the AAP project. Next, it was time for the remote flyer challenge. The kids really seem to like this activity and were very excited to test out their flyers on a hill at GCC. Overall, the week was a great opportunity to observe different teaching techniques and see how a different age group responds to the geospatial curricula that Susan and Chip have designed. Next week, I will be visiting Jim Hooper in Bristol Hills. Stay tuned!

Until then,

Rain



- Some students learning about how planes are riveted together in the hangar at the Genesee County Airport



— Students playing the Twister like game that Time Warner Cable created.



— Students getting ready to launch their remote sensing glider

Posted in **4-H Youth Geospatial Science: County STEM Connections**

## **Week 6 & 7 : Getting it Together!**

Posted on **July 16, 2013** by **rkh64@cornell.edu**

In my sixth and seventh week of my internship my main focus has been getting resources and files together to create a digital form of the notebook that we gave the 4-H educators at the In-Service in early June. This entails figuring a way to organize the many files that make up this large document. It has been a bit tricky to figure out a sensible way to organize the files but with the help of Susan Hoskins, we are well on our way to figuring out how to present the information. I also had the task of uploading more pictures to the USGS/NASA citizen science program, Adopt A LANDSAT Pixel. There were some data sets from the 4-H Career Explorations program that needed to be uploaded to the Flickr site. Interested in checking out the programs Flickr? Here's the link :

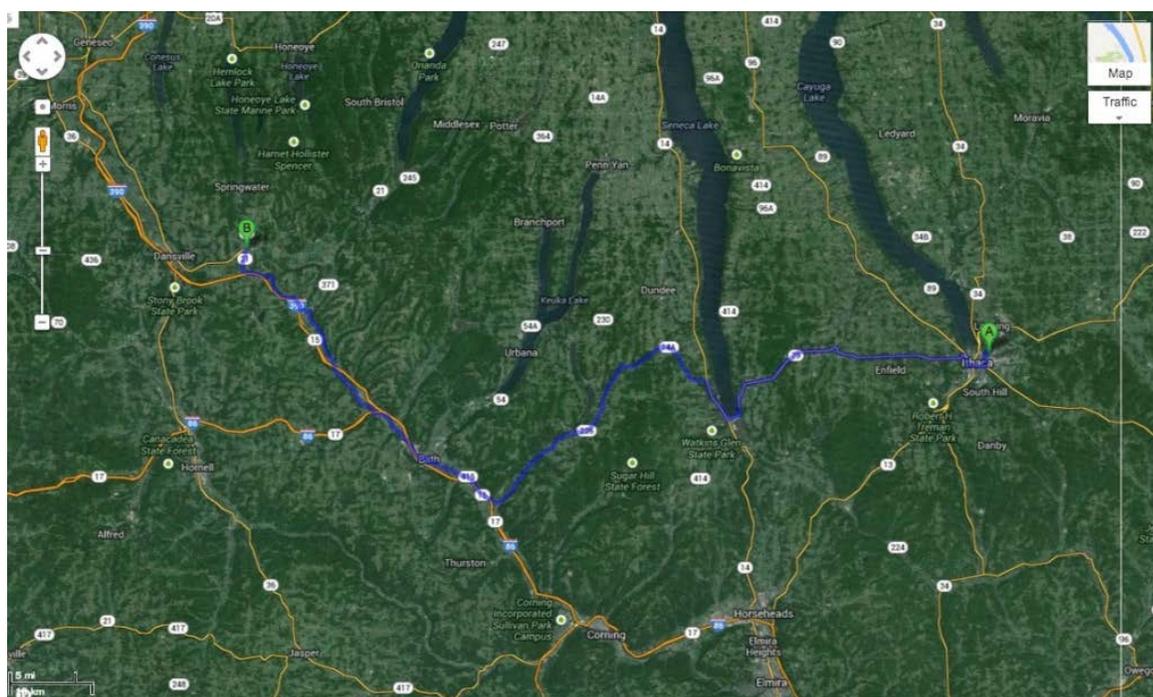
<http://www.flickr.com/groups/landsat-adopt-a-pixel/>

I also visited Susan at the IRIS headquarters on the 10th floor of Bradfield where I was able to reset the GPS units, tablets, and mini video cameras from Career Explorations. I also sorted through the leftover paper work from Career

Ex. Susan and I discussed writing 4-H curricula which I will be doing soon in my internship. In the near future, I also plan on attending an MST (Math, Science, and Technology) camp with Chip and Susan.

To make up for the somewhat mundane topics covered in this blog post, I figured I'd include a few pictures of what I find interesting about GIS technology in relation to New York State.

Because I have been traveling in NY state quite a bit this summer, the county road maps have been very helpful for me. I have a great aversion to driving on expressways so I go out of my way to drive "backroads". To do this, I rely on the GPS unit that is in my phone and the Google maps application. Here is a screenshot of the drive that I make from Ithaca to my summer housing in Western NY. Google Maps layers a map of the NY roads with a topographic satellite image of NYS.



— The commute I make every so often from Ithaca NY to Wayland NY

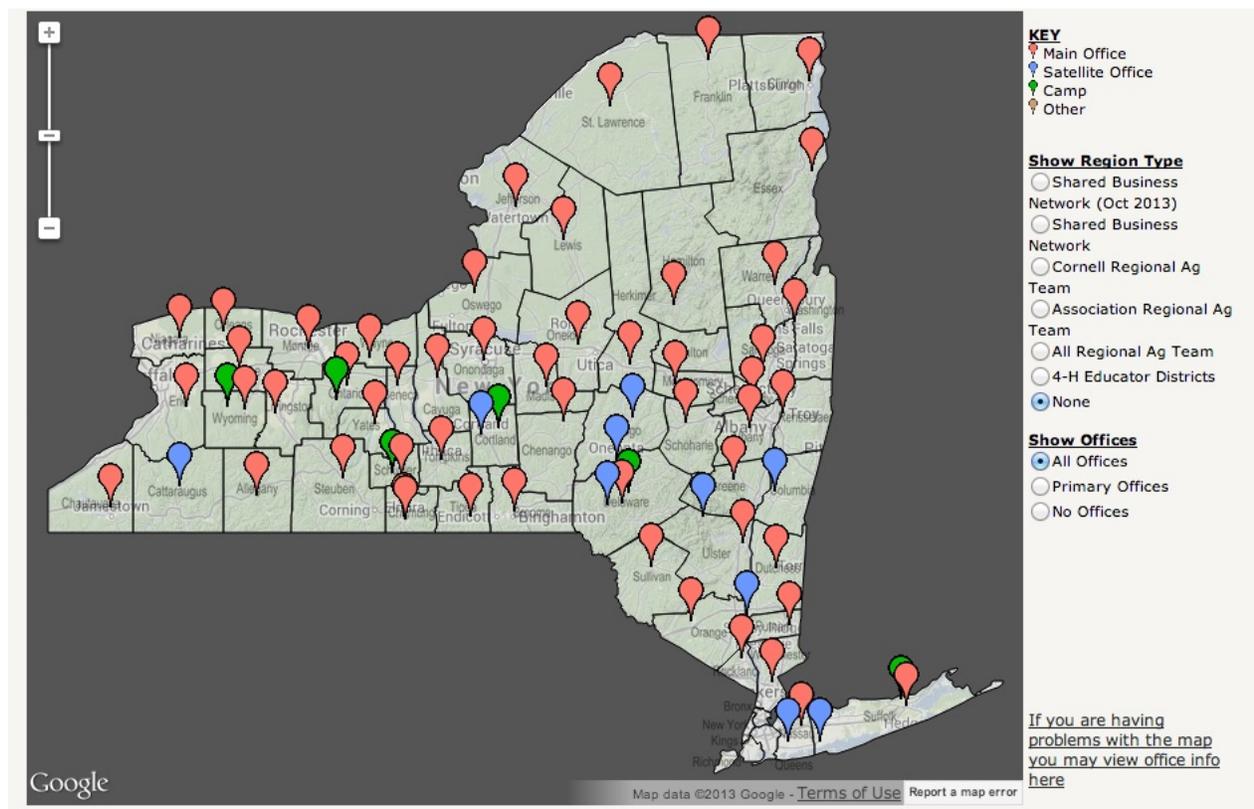
I have always loved the water so this next map is very cool to me. It shows all of the water features in NYS in relation to their geographical position in the state.



— A map of NY rivers and lakes

As an out-of-state student, this internship has shown me that it's easy to learn more about whatever place you're in by studying maps of the area. I never realized how much interesting information you can learn from maps!

And finally, I leave you with one of the more impressive maps of NYS that I've come across, below you will find a map of the counties in NY that includes all of the CCE office locations. I really admire how nearly every county has their own CCE office. To an out-of-stater NY seems to have a great model of extension.



— A map of the CCE offices in NYS

Until next time,

Rain

Posted in **4-H Youth Geospatial Science: County STEM Connections**

## Week 5: Career Explorations and a Follow Up

Posted on **July 9, 2013** by [rkh64@cornell.edu](mailto:rkh64@cornell.edu)

This week I spent my time at the 4-H Career Explorations program held on Cornell's campus. The entire program entertained about 600 high school students while our specific program had 19 high school students from age 14 to 18 who spent their three days immersed in the world of geospatial science. On their first day, the kids were introduced to geospatial science and given a quick tutorial on how to use GPS units. The next day, the students were able to apply their new knowledge as we hid and found geocaches, marked waypoints for the Cornell Plantations and created STEM maps on ArcGIS online. On their final day, the students were told about the NASA Landsat satellites and given the opportunity to participate in citizen science through the Adopt-A-Pixel Program. Finally, the

students completed the Glider Design challenge where they attached a mini camera to a foam glider to get an idea of how remote sensing works. I could tell this was the students favorite activity and they seemed to have a lot of fun with it. Overall, it was interesting to observe how quickly the students learned how to use all of the technology that is involved with geospatial science. It makes me think that since we are training so many adept people at a young age, the technology is only going to get more and more advanced. On Friday, we had the follow up Webinar for the In-Service workshop we had at the beginning of the month. This was an opportunity for the educators to share how they have implemented geospatial science into their 4-H curricula and also a chance to get any questions they might have answered by the IRIS staff.



— Susan Hoskins instructs the 4-H Career Explorations students

Posted in [4-H Youth Geospatial Science: County STEM Connections](#)

## Week 4: My Adventure to Genesee

Posted on **June 30, 2013** by [rkh64@cornell.edu](mailto:rkh64@cornell.edu)

This was my first week at the CCE office in Genesee and I think it was a great success! The rocket launch at Bristol Hills was moved to Friday, so I spent Tuesday drafting a follow up email for last week's In Service Workshop. The

email included a compilation of notes that were taken during the discussions and each person's implementation plan that details how they are going to apply their new skills in their own youth groups.

Susan came up to CCE Genesee the next day and we spent much of our time discussing future plans at various MST or STEM camps. Chip also gave me the grand tour of the CCE Genesee office and introduced me to many of the nice people who work there. They all seemed excited for me to be there for the summer. We also were visited by other interns from Erie county who are conducting research targeted towards 4-H members. They gave us an interesting presentation on their findings from interviewing many youth and adults involved in 4-H. Chip also hosted a nice yogurt parfait social to give me an opportunity to meet and talk with others who work in the office. Later, I spoke with Susan about tasks that I have for the rest of the summer. She introduced me to the National 4-H template that was actually adapted from New York 4-H. She also sent me many resources to begin compiling for a master document that I will be attempting to create throughout the remainder of the summer.

To end the week, Chip gave myself and another student a tutorial in Earth art using Google maps. Earth art is a way to impose images onto the landscape with a mapping application and then with a GPS, markers are laid out on the ground to outline the image. This seems like a great way to get kids interested in geospatial science. After the quick demo at the CCE office, we went to the airport and tried out our design in the parking lot. It worked and I found it quite rewarding to see the image we drew in Google Earth actually laid out on the ground. After we finished this lesson, we went back to CCE Genesee and I began sending out the follow up emails I began at the beginning of the week. With the help of Chip, I also began to draft an evaluation for the Career Explorations workshop that will be held next week.

Overall, I really enjoyed the time spent at the Cooperative Extension office and I am really looking forward to learning more about it.

Stay tuned next week to hear about what happens at the Career Explorations workshop held at Cornell.

Until then,

Rain



— A Google Street View of the CCE Genesee Office Building



— An example of Earth Art in a crop field.

Posted in **4-H Youth Geospatial Science: County STEM Connections**

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## **Week 2 & 3 : GPS, GIS, and Geocaching, Oh My!**

Posted on **June 17, 2013** by [rkh64@cornell.edu](mailto:rkh64@cornell.edu)

This week the IRIS staff and members of CCE hosted an In-Service Workshop to teach geospatial science to youth educators. Susan Hoskins, Chip Malone, Jim Hooper, and Steve Smith all helped to teach the group that gathered for the three day workshop. The participants who came from all over New York state had varied experience in both GPS/GIS technologies and youth education. It was clear that they were all passionate about youth education as the

workshop progressed and they openly shared experiences and ideas with each other about their own 4-H groups. This open exchange of information was one of the most interesting part of the workshop because participants and the leaders of the workshop were able to build off each others ideas and talk through various scenarios that could happen when teaching geospatial science.

Some of the activities we did in the workshop included geocaching, setting up ArcGIS online accounts, and Adopt-a-Pixel Program, the citizen science program launched by NASA and the USGS (United States Geological Survey). It was great to see how the participants immediately thought about how they could implement each activity in their own youth groups while we were doing activities. The workshop also served as a way for youth educators to hone their own GPS, GIS, and RS (Remote Sensing) skills so that they can improve their ability to teach the material.

Unfortunately, I got into a car accident and was not able to attend the last day of the workshop. I'm sure it was just as productive as the first two days. In reflection, attending the workshop gave me great insight into the realm of adult education and how extension plays a role in it. It was also inspiring to learn that many of the participants are volunteers who are committed to enriching their communities through youth education programs like 4-H. I will be looking forward to seeing the difference between the experience the youth educators had and the one that the actual youth will have at the Career Explorations workshop that will be taking place at Cornell at the end of the month.

Overall, the staff that put on the workshop clearly put a lot of effort into it and I believe it was very well received by the participants who seemed very eager to take all they learned back to their hometowns.

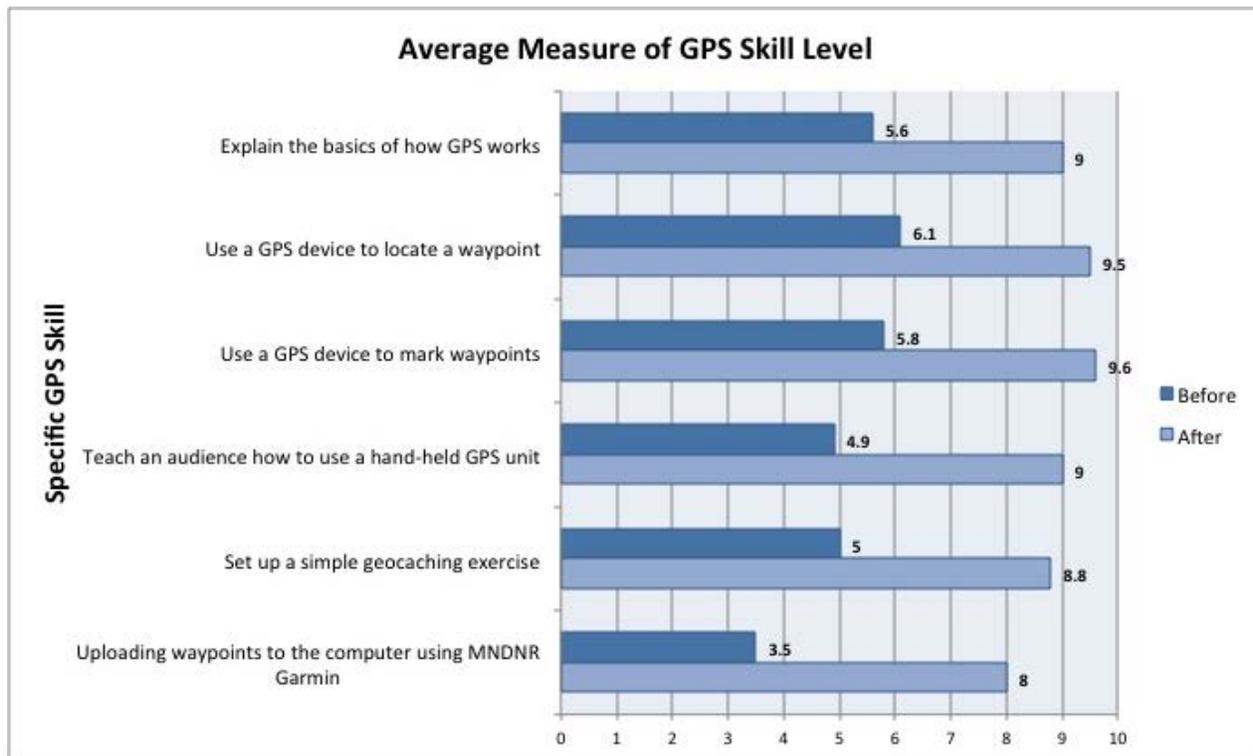
Due to the accident, I spent Week 3 working from home while I searched for a new vehicle. Thankfully, my advisors are very flexible and found tasks that I could do from my computer. Chip gave me the task of analyzing the pre and post evaluations that the participants of the workshop filled out. I used Microsoft Excel to enter the data and create graphs. Funnily, I found myself drawing knowledge from my statistics class (you know, the one I swore I'd never find any practical applications for). I also went to the IRIS offices and cleaned the GPS units again for the Career Explorations workshop that will happen in the last week of June.

Next week, I will also be going to 4-H Camp Bristol Hills on Tuesday to attend a rocket launch! It will also be my first week at the CCE Genesee office. I am looking forward to this exposure because I am very interested in extension work as a career.

Until next week,

Rain

P.S. I have included an example of the graphs that I made for the analysis of the evaluations and another picture of my totaled truck. 😞



— The average improvement of skill reported by workshop participants

— My trusty but Rusty Blue.

Posted in **4-H Youth Geospatial Science: County STEM Connections**

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## **Week One: O-week at Iris**

Posted on **June 2, 2013** by **rkh64@cornell.edu**

Hi, my name is Rain Hennessey and I am a rising junior studying Agricultural Science at Cornell. This summer I will be working with both Susan Hoskins and Chip Malone in the 4H Geospatial Science program. This first “o-week” or orientation week, I spent my time with Susan at the IRIS (Institute for Resource Information Sciences) headquarters on the 10<sup>th</sup> floor of Bradfield Hall. Most of my time was spent becoming familiar with the technology used in the program and also preparing for the In-Service workshop that we will be conducting next week.

On my first day, Susan introduced me to the Garmin GPS units that she lends out to various 4H programs. We went outside for a quick demo and then I learned how to upload the information from the GPS onto the computer using multiple applications (DNR GPS and Google Earth). After learning how the units work, Susan gave me the task of cleaning them. I didn’t think they looked very dirty! Cleaning the GPS units consisted of clearing the stored data on each device and formatting the settings so that all the devices are uniform.

I also met Diane Ayers, who told me about the history of the NYAg District program and how it is run today. She also gave me a tutorial on how to work the big poster printer that they have in the office to print maps and other posters. We used it to print a State Mosaic from the United States Geological Society (USGS).

On my third day, I learned about NASA/USGS Adopt-A-Pixel Program. Susan and I did another quick demo outside with two of the tablets that are used by 4Hers. This program utilizes citizen science by encouraging people to take a series of pictures at specific locations and then upload them to a group Flickr site to be analyzed by scientists.

Another part of my week was spent sitting in on conference calls with Susan. On separate calls with both Chip Malone and Jim Hooper, we worked out my schedule in a little more detail. I also got to listen in on the phone conference of the NYS GIS Association's Education committee. They talked about many interesting things but what stuck out to me was the mention of a noticed decline of GIS programs in places of higher education. Unfortunately, much of this is attributed to lack of funding.

To wrap my week up, I helped prepare for the In-Service training for Youth Educators by organizing some of the materials they will receive into binders. Looking back, I learned so much in my first week! It amazes me to learn about some of the applications of GPS/GIS and how versatile geospatial science is in its application.

That's all for now and I leave you with an image of the glorious state of New York!



Posted in [4-H Youth Geospatial Science: County STEM Connections](#)

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