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2014 CCE Summer Internships

CATEGORY ARCHIVES: [HEALTH AND THE BRAIN NEUROSCIENCE OUTREACH](#)

Week 12: August 4-8

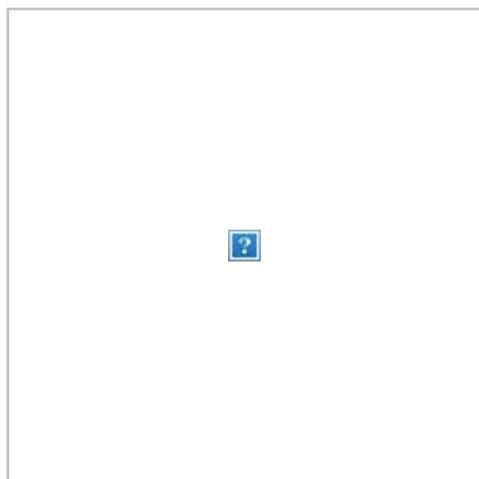
Posted on **August 20, 2014** by lr58@cornell.edu

The final week of my CCE project was definitely one to remember. Since this was my third week at camp, I used my first and second week experiences to improve the project. For example, from past weeks, I had learned what worked and what didn't in terms of recruiting campers for Health and the Brain. Recruitment went really well on Sunday. It was a rainy day, which caused camp registration line up to have to take place indoors. Since all of the families were so close together, I was able to advertise the Health and the Brain activities to larger groups at once and have my answers to questions be heard by a larger audience. On Monday, I met with the campers who had signed up for Health and the Brain to discuss their activity schedules for the week so that I could make sure to offer my lessons at times during which they would not miss out on activities/events they really wanted to participate in. I took full advantage of eating each meal with the campers, in that I used those times to make important announcements about the project. I had learned from previous weeks that scheduling and meal times were crucial to the success of Health and the Brain. I randomly arranged the campers who had signed up into two groups, one for each of the modules. I flipped a coin to determine which module would be offered first, and genetics and neuroscience won the coin toss for the Tuesday spot. The DNA molecules that the campers built using pipe cleaners and beads came out very nice:



- Here I am holding a DNA molecule that a camper made.

On Wednesday morning, I was interviewed by reporters from *Human Ecology Magazine*, who had traveled all the way to Canandaigua to check out 4-H Bristol Hills. That was truly an amazing opportunity. I really enjoyed being able to show the reporters first-hand just how enriching the camp is for the children and staff involved. In the afternoon, I taught the nutrition and neuroscience module, in which the model brains that the campers made out of *Crayola Model Magic* looked really cool:



- Here is one of the model brains that the campers made out of Model Magic.

I had a particularly memorable interaction with the last camper that I worked with, during my final session of my final week. When he finished the survey, he handed it to me and said, "Thanks for this. It was really interesting." I looked

at him and smiled. When I asked why he thought what we did was interesting, he replied, “These activities that you just helped us with? Yeah, they were a lot of fun. More fun than the stuff we do in school, and I still learned.” As he turned to leave, I thanked him for participating in the project, and told him to enjoy the rest of his summer...little did he know he had just made mine with our short conversation. Working with that boy was a great way to end a great summer.

While packing my things, I had to say goodbye to three people who helped me more than they know this summer. Alexandra Holmes, Kathleen McCormick, and Ciara Rodriguez were my cabin-mates at camp, as they were CCE interns as well. We started the summer as strangers and ended it as close friends. Alexandra, Kathleen, and I are all College of Human Ecology students, so we spent a lot of time together doing interviews, taking pictures and laughing too much:



— From left: Kathleen, Me, and Alexandra outside of our cabin.

Now that I have returned to Ithaca, it is time to analyze the data that I collected via the Health and the Brain surveys. I am so grateful for the opportunities that I have had this summer through this CCE internship. After gaining field experience in research, I am even more determined to pursue a career that will combine scientific research with outreach in the broader community, such as that of medicine. I would like to thank Dr. Reyna, Priscila Brust-Renck, and Evan Wilhelms for all of their support and guidance in making this project a success. Lastly, thank you to the staff of 4-H Camp Bristol Hills for welcoming me into their community to complete this project. It really was a fantastic summer. Thanks for reading!

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Week 11: July 28-August 1

Posted on [August 5, 2014](#) by [lrd58@cornell.edu](#)

Teaching this week at 4-H Bristol Hills went really well. Like the week before, I taught two sessions for residential campers. On Wednesday, I taught the nutrition and neuroscience module from 2pm-4pm and then the genetics and neuroscience module from 4pm-6pm. The nutrition activities all ran according to schedule, with the campers asking really great questions along the way. The campers seemed to especially enjoy modeling clay brains, and were interested in how taking care of their brains and bodies in general, could help them succeed in academic and athletic programs. A few weeks ago, I wrote about how I needed to swap out the packing peanuts I was going to use for one activity for a variety of colored pom poms. It turned out that the activity worked even better with those fuzzy little balls because they were of all different sizes, making the campers think quantitatively about what energy was being processed by the cells that they were pretending to be.

I was really impressed with how much the campers knew about the functions of different vitamins and minerals, along with their various sources. They were able to put their knowledge to good use during a variation on the game *Headbandz*. Essentially, each camper was given a visor that I made (see below), and had to help each other figure out which word they were assigned. For example, one camper was wearing a visor that said "Iron", and his friend said, "Well, you should try to guess something that is found in a lot of dark green veggies, like spinach." I was so excited, because I was able to elaborate on the benefits of healthy iron intake, knowing that the campers were engaged in the conversation as well.



- The students enjoyed playing this game with a twist, with these visors that I made!

I was also very pleased at camper feedback with the genetics and neuroscience module. The campers told me that

they really had fun building their own DNA molecules, since they had heard the term in their science classes before, but never actually understood the structure itself. They also got a lot out of the mutation game, saying that they never thought a mutation could be helpful to an organism; until participating in this activity in which the texture of some materials kept those items safe from being “plucked” from their bin. However, I did notice that it was easier for campers to lose focus during this module, becoming more talkative during activities that required partner interactions. Since this is all a learning experience, I now understand that during future lessons, I may have to encourage the campers more frequently to stay on task with the activities. The survey that the campers completed went really well. Most found the questions straightforward, and patiently waited as their friends completed this important part of the project.

Since I eat meals with the campers, I get to know some very well if they take part in Health and the Brain with me as well. I felt myself getting emotional on Friday, when saying goodbye to my group of campers. A small part of me hopes that when they go back to school in September, and are telling their friends of their summer camp adventures, they think of me and (more importantly) the lessons they learned this week.

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Week 10: July 21-25

Posted on **July 22, 2014** by [lrd58@cornell.edu](#)

The morning of Sunday, July 20th finally brought the big day! I woke up early to drive to Canandaigua, New York, which is where 4-H Camp Bristol Hills is located. The trip took about 1 hour and 45 minutes to complete. When I drove up to the camp site, I was immediately impressed by the natural beauty of the area. There is an amazing mountain view from the parking lot:



Since each camp session lasts for one week at Bristol Hills, the entire camp staff has a meeting each Sunday to prepare for the incoming campers. I got to be a part of the meeting this week, during which I was introduced to the counselors at the camp. Everyone was super friendly and willing to help me get settled into the new environment of the camp. One of the cute traditions that the camp has is that all staff members go by “camp names” instead of their

real names. At the end of the week, campers have a fun time trying to guess what their counselor's name is before leading up to the big reveal. I was named *Medulla* by the staff, after my short introduction about how I love studying the brain.

Campers started showing up for registration around 1:30 pm; after the meeting was over. During this time, I was able to talk to campers and their parents about signing up for Health and the Brain as an afternoon activity. I had a lot of fun explaining what I have been working on over the past few months. One parent told me she hopes that one day her daughter will find something she is as passionate about as I am about science. That comment got me very emotional and was a great motivator for me while recruiting participants. After recruiting a number of campers, I organized consent forms in the staff office. The office is the only place at camp with wifi—the directors try to encourage a technology-free experience for the campers.

My first dinner with the campers was excellent. We all sit at different tables each night, so we're always meeting new people. Everyone made me feel so welcome, and many were curious about the research I do down at Cornell. At night, there was a campfire, complete with songs and stories. I cannot wait to see what the rest of the week has in store. For now, I'm off to bed, in my cabin that looks like this:



— My cabin is called “Big Dipper”

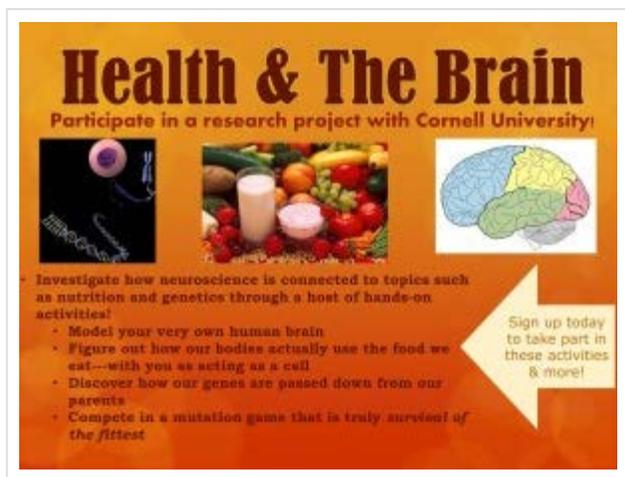
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Weeks 8 & 9: July 7-18

Posted on **July 22, 2014** by **Ird58@cornell.edu**

These two weeks were filled with preparations for my trip to camp. If I've learned one thing about the world of research through this internship, it's how to think on my toes, and try to make the best out of a situation that is turning out to be different from what I had originally planned. The store from which I had originally ordered the craft supplies for the Health and the Brain modules suddenly told me that many of the items were backordered and would not get to Ithaca in time for me to take them to the 4-H camp. I reworked some of the activities in order to accommodate the items available at local stores. For instance, instead of using dried beans in an activity about how the human body uses food energy, I switched to the concept of packing peanuts. When I learned that those were unavailable, it occurred to me that I could use small, fuzzy "pom pom" balls. It turns out that I was able to purchase the fuzzy balls in a variety of fun colors that may actually end up being even more fun for the campers. This was definitely a "when life gives you lemons" type of situation.

Over the past few days, I created a poster to use to advertise the Health and the Brain program during Sunday recruitment at the camp. My main goal is to get as many campers as possible to sign up for the program as an afternoon activity. I'm quite excited about it:



The past two weeks were also very important in my training in working with adolescents. The Medical Decision Making team that I am on in lab began testing of the *EatFit Plus* program. I was able to help out in the entire process of testing the group of 15 year old students who voluntarily took part in the program. I gained experience in how to deal with questions from young subjects, as well as how to keep them motivated to complete the testing process. Making sure that participants are comfortable in the testing space is also crucial, as I have learned. These skills and lessons will come in handy during my time at 4-H Bristol Hills!

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Week 6: June 23-27

Posted on **June 27, 2014** by lrd58@cornell.edu

After teaching both the Nutrition and Neuroscience and Genetics and Neuroscience modules at 4-H Bristol Hills, I will be presenting students with a short survey regarding the information that they just learned. Some questions will simply test their knowledge on a topic, such as how to read a food label, while others may make them think about how much they value certain principles after participating in that day's activities. For instance, students will be asked to rate their agreement with the statement "I have a responsibility to myself to stay healthy." Student answers to this questionnaire will provide insight into the effectiveness of the intervention.

In order to properly report results at the end of the summer, statistical analysis will be needed to quantify the different aspects of the survey. Over the past few days, I have been learning how to use the program, *IBM SPSS Statistics*. This is really useful software that allows researchers to run statistical tests on large data sets. I have been practicing tests on data from previous studies done in the lab, so that by the time the end of the summer rolls around, I will be confident in my abilities to analyze the data from the 4-H campers. Right now, I am learning how to detect the presence of significant correlations between different measures used in a variety of studies. The results of running such an analysis can allow researchers to decide whether or not the measures used in an experiment were valid. This week, I have learned to distinguish between the *reliability* of measures used in a study versus the *validity* of those measures. In short, a study's measures are considered to be reliable if subjects answer questions similarly/consistently throughout the study itself. Validity on the other hand, can tell researchers whether or not the methods used actually measured what was needed. Validity can be tested when comparing measures used to a different set of measures. While learning to use new statistical software is no easy task, it will certainly be beneficial to know how to perform such analyses after I return from my work at 4-H Bristol Hills.

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Week 5: June 16-20

Posted on **June 20, 2014** by lrd58@cornell.edu

One facet of research that I have learned through working in this laboratory is the importance of staying up to date with the literature in your field of focus. Currently, I am looking into measures that other researchers are using to change the eating and exercising behaviors of human subjects. I want to ensure that I am aware of the most recent ways that other scientists are targeting obesity prevention. Over the past week, I have been focusing on improving my skills in searching for and retrieving scholarly information via online databases. Dr. Reyna, along with the rest of the research team, has stressed to me the importance of finding information from *reputable* journals. The quality of the journal in which a scientific paper is published can provide insight into the quality of the experiment that was

performed. *Web of Science*, a great internet database, has been very useful in helping me to determine the quality of journals through listed “Impact Factor” numbers. Journals given higher Impact Factors tend to be the ones we seek to use articles from.

I am specifically looking at what new types of interventions are most effective in getting individuals to eat healthier and exercise more often. Frequently looking into current research going on in the field of nutrition is crucial; I definitely want to make sure that I will be providing the 4-H campers with the most updated information regarding eating and fitness.

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Week 4: June 9-13

Posted on **June 13, 2014** by **lrd58@cornell.edu**

This week, I focused on updating the Nutrition and Neuroscience module for the middle school students. The first step that I took was narrowing down the main points that I wanted to make in my lessons for the campers. Nutrition is a concept that features a number of controversial points and spans a number of varying topics. For example, when discussing nutrition, one could talk about vitamins and minerals, along with their importance; and then switch gears into a conversation about the factors that affect how or when we eat. Thus, it was important for me to identify the gist principles that I wanted the hands-on activities to bring out. With the help of my fellow laboratory members, I was able to create this list of gist items:

- *Your diet should consist mostly of fruits and vegetables.*
- *Developing healthy eating and exercise habits has both long-term and short-term benefits for a person's physical and mental health.*
- *Any amount of exercise is good for you.*
- *You should exercise regularly.*
- *Exercising and eating healthy help to reduce one's risk for developing diseases.*

I identified these items by going through the evidenced-based web-tutor EatFit curriculum developed in the Laboratory for Rational Decision Making. I listed the above points after recognizing that they were the overarching concepts present in Eatfit. These gist items are what subjects should take away from the program; regardless of whether it is web-tutor EatFit or the 4H module. Having this list is useful, seeing as I am matching each of my activity ideas to what gist principle it would support. By highlighting these main points, hopefully the updated 4H camp curriculum can be successfully used as a tool to prevent obesity.

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Week 3: June 2-6

Posted on **June 5, 2014** by lrd58@cornell.edu

One of the most exciting aspects of this internship is that I will have the opportunity to work directly with middle school students at 4-H Camp Bristol Hills. However, with this honor comes a major responsibility to connect with the students on a personal, yet also professional level. Over the course of the past few days, I have been being trained on how to work with adolescents in an appropriate manner. I have been traveling with my fellow lab members to local schools. I have been learning how to collect data in ways that make young subjects comfortable enough to provide honest feedback and ask questions when necessary. Perhaps the most crucial takeaway from these excursions has been the importance of addressing the individual needs of adolescent subjects. For example, some students may be focused listeners and only need to hear required questions asked once. On the other hand, there are many students who may need additional support or more time to answer questions. I am taking these experiences into consideration when updating the curriculum for the middle school students.

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Week 2: May 26-30

Posted on **May 30, 2014** by lrd58@cornell.edu

This week, I focused on developing the lesson plans for the Genetics and Neuroscience module that I plan on presenting to the middle school students at the Bristol Hills 4-H camp. The most challenging aspect of this task is creating activities that will both be really fun and engaging for students as well as informative and deeply rooted in the work of Dr. Reyna and her research team. Over the past few days, I have been specifically looking to incorporate some of the methods that Dr. Reyna has used in her studies when looking at medical risk estimation. This topic is crucial in a discussion of genetics, for knowledge of genetic risk factors for diseases, such as breast cancer, could possibly save lives in terms of early detection and awareness of treatment options. Particularly, I found Dr. Reyna's 2001 paper with Dr. Farrell J. Lloyd, *A Web Exercise in Evidence-based Medicine Using Cognitive Theory* to be very useful. In their study, they had adult physicians use visual representations of risk via a 10x10 grid and a variety of colored strips. Each square on the grid represented an individual, so percentages were able to be presented in this format. Dr. Reyna and Dr. Susan C. Ellis mention in their 1994 study, *Fuzzy-Trace Theory and Framing Effects in Children's Risky Decision Making* that they used a colored spinner when studying risk taking in children because past research has shown that children can estimate relative probabilities based on

how large certain colored areas are.

Based on the information in these two studies, I decided to plan out an activity for the middle school students that involves a similar grid that Dr. Reyna used, in which the students could use various colored paints to represent varying levels of genetic risk. I used the statistics from the web-tutor version of BRCA Gist to incorporate the necessary information needed to make this an effective activity. I plan on testing out the activity on my fellow lab members, in order to get ideas on how it can be improved even further.

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Week 1: May 19-23

Posted on **May 23, 2014** by lr58@cornell.edu

This week, I officially began my summer internship working on the CCE project entitled, *Health and the Brain Neuroscience Outreach*, under Dr. Valerie Reyna. In late March, I joined Dr. Reyna's Laboratory for Rational Decision Making, specifically as a member of the Medical Decision Making Team. The Medical Decision Making team seeks to use research on the mechanisms of decision making to help develop recommendations for educators and medical professionals on how to successfully communicate risk to patients. Medical patients can then use the learned information to make decisions regarding their health. I am excited to utilize the scientific research skills that I have learned in the laboratory so far to help the CCE project succeed.

I am currently working on updating the curriculum taught last year to middle school students at 4-H Camp Bristol Hills, in Canandaigua, New York. The two modules that I am focusing on will help the students to understand more about obesity prevention and genetic risk. This month, I was fortunate enough to meet with the camp directors at Bristol Hills to discuss the modules. Their feedback was very helpful and I am looking forward to my continued partnership with them.

Dr. Reyna's past publications about how children remember and interpret information, in terms of fuzzy-trace theory, have been useful in the development of activities for the summer camp. It is my hope that I will be able to apply her incredible research to a classroom setting in a fun, fresh way for the campers. I am delighted to have been presented with this opportunity, and eager for the experiences that this summer will bring.

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CATEGORIES

- [4-H National Youth Science Day Experiment Curriculum Development](#) (6)
- [Assessing Potential for Scaling Up Farm to Cafeteria in Saratoga and Washington counties in New York State](#) (3)