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IMPACTS Training Program

### IMPACTS Program - Morehead Planetarium & Science Center

On January 21-22, 2017, a training session was held in Chapel Hill, North Carolina on the UNC-Chapel Hill campus. Inspiring Meaningful Programs and Communication Through Science (IMPACTS) is a science and education based program that involves getting younger students involved in hands-on activities. The session was led by Tamara Poles. During this two day training, each day was filled with hands on activities, team building, problem solving, and critical thinking. All of the activities that we participated in can be implemented in classrooms and outreach events.

During the first day of training, we started off with an icebreaker activity called "Making Meaning". This activity included introducing ourselves and sharing a memorable moment that was an impactful learning experience and how it was meaningful to us. By doing this, we were able to go back and think about how we got where we are today. This included identifying what influenced us to choose our majors or career paths. The next activity included a series approaches. The second activity was called "The Pleasure of Finding Things Out". This activity was based on using our senses to discover what we can't see. Each person was given a black box that had a rectangle cut on the side and a piece of paper to write what we think is in the box. The rules of the first round were for each individual person to discover what was in their box without opening or damaging the box. In order to do so, we had to use our senses. During the second round, each person moved to another table to a new box. We then explored the new box and added descriptions to the list that was with the box. During the third and final round, we moved to one more table with a new box, a tray of tools, and someone to work with. While working with the other person, it was beneficial to have a second pair of eyes and hands trying to figure out what was in the box.

At first, during the second round of exploring the box, the tray of tools was placed in front of us but we didn't use them. The lesson behind this was to let the participants know what is available to me. An example would be having a table of objects such as Rubik's cubes, buttons, and switches. When participants come to you to participate in your activity, you have to inform them that they are allowed to interact with what is in front of them and not assume that they know what they can and can't touch. At the end of the day, we were able to open the boxes to see what we inside of them. This part was one of the most interesting because we were able to see what we didn't see or feel before. There were items on the top, sides, and back of the box that we didn't discover before opening the box.

In the afternoon, we were taken on a Hidden History tour by Crystal Harden. In the downstairs basements area of the Morehead Planetarium was a small museum. This museum included pictures and descriptions of key people who played important roles in history. Some of these people included The Tuskegee Airmen, Betsy Johnson, and Catherine Johnson. Each person was given a spot on the wall that was lit up with lights and included a description of their contribution to history.

At the end of the first day, we were given the task of creating three concept maps that were shared during the second day of the training program. This concept map was used to pick a topic that we were interested in creating an activity for and use as an idea as an outreach activity. The branches attached to the concept or topic included questions such as: what materials are needed?; what is fascinating about it?; what analogies describe the topic?; what does it matter in people's lives?; what are good hooks for engagement?; what prior knowledge might people have; what will inspire people to ask questions and vice versa?; how is the sequence of ideas important?; what context can be used to describe it? This series of questions made it easier to plan how to approach presenting an activity to a group of participants.

On the second day after discussing our concept maps, we engaged in an activity called "What's In a Word?" During this activity, we all listed words that were considered to be examples of jargon. Jargon means words that can have multiple meanings or an unclear definition. We then took these words and found an alternative word or explanation. This activity taught us how to adjust our vocabulary based on the audience. An example would be doing an activity with high school students versus elementary school students. The terminology while working the students would vary between the two age groups.

One other activity was "Inquiry Questions". During this activity, we worked with a partner and worked on asking opening questions, exploration questions, and meaningful questions. We were given an object and one person was to ask the other about what they thought the object was for and what it was. This activity was helpful in showing us how to ask questions that make the audience think more while they are engaged in an activity. The last activity that we did was called the "Scientists and the Visitors". During this activity, there were groups of three; one person was the "scientist" and the other two were the "visitors" and a rotation occurred so that each person had a chance to be a "scientist". The goal of this activity was to have the "scientist" describe what was on their given paper to the "visitors" so that they could draw what was being described. This was an activity that helped us learn how to describe objects to people in a way that they would be able to understand it since each person perceives information differently.

Along with attending the training, we also received a checklist of requirements that go towards us becoming science ambassadors. On this checklist, it involves us creating our own science expo or activity with the help of a consultant. Once we have a set activity, we then go out into the community and engage students in our activities. Attending the IMPACTS program was very beneficial in my goal to become an educator. I learned various techniques that can get students involved and how to create activities that will be able to be used universally over various grade levels and age groups.