

COSEE GEARS Final Project

A workshop program to expose diverse students to the career prospects in Ocean Sciences

- I. Purpose: To develop and implement a program to be used during a student workshop, which will enlighten students about the breadth, applications and wonders of oceanography such that it will encourage them to pursue this field.
- II. Intended audience: A diverse (most broadly defined) group of high school students
As an example, I will implement this activity during a workshop with underrepresented high school students who are part of an NSF-funded outreach program called IDEA (Increasing Diversity Enhancing Academia) based at the North Carolina Central University. The IDEA program is aimed at getting students immersed in the geosciences—from visiting local fieldwork sites, meeting diverse graduate students and faculty, and conducting mini laboratory experiments. The program that I developed will be implemented during a workshop held in the Marine Sciences department at UNC Chapel Hill, serving as the culmination of a one-week summer camp for the students.
- III. Rationale: The scientific process benefits from a myriad of perspectives delivered by diverse individuals. Diversity in the geosciences, and especially in oceanography, has been steadily increasing, but is still low compared to other STEM fields. Working with Michele Drostin, an Outreach Coordinator at the UNC Chapel Hill Institute of the Environment, I learned that one of the biggest deterrents in entering oceanography for many underrepresented high school students from North Carolina is a simple lack of knowledge of the job prospects and possibilities with a degree in this subject. Drawing from my own experiences, I would agree with this explanation. Of course, other various factors impede on student involvement in oceanography, but by implementing this workshop program, I hope to tackle this knowledge gap.
- IV. Activities: Concept Mapping; Live-video interaction with the Ocean Exploration Trust Corps of Explorers
 - i. Using Concept Mapping to promote self-realization of the career paths stemming from an Ocean Sciences degree.
 - i. Tools:
 1. Post-it notes
 2. Pens/pencils
 3. Large sheet of paper
 - ii. Instructions
 1. Have students break into groups of no more than 4.
 2. Provide each group of students with the tools.
 3. Ask the students to think about the different sub-disciplines that serve as foundations of ocean sciences.
 4. From the sub-disciplines, ask the students to think about what types of research projects can be done and what skills are required for each

5. Ask the students to think about what jobs might be available to those who have acquired the respective skills
6. Have the students create a concept map taking into consideration the key points above
7. Ask each group to present their newly-created concept maps.
8. Present a refined concept map which I have created myself.

iii. Discussion

The students will be allowed to discuss the differences in the concept maps presented. Through this activity, the students can be exposed to the different ideas of others regarding job prospects in the Ocean Sciences, with the hope of opening their eyes to the multitude of opportunities in this field. This activity allows students to escape traditional or stereotypical notions of what one can accomplish after pursuing an ocean sciences degree, while drawing similarities and differences in the students' ideas, which is likely influenced by their diverse backgrounds.

ii. Live-video interaction with the Ocean Exploration Trust (OET) Corps of Explorers

i. Tools:

1. Video-conferencing-capable facility (or just a downloadable program on the laptop).
2. Projector screen
3. A request to do live video interaction with OET through nautiluslive.org

ii. Instructions

1. Encourage the students to ask the Corps of Explorers any question relevant to ocean sciences

iii. Discussion

This activity is meant to provide the students with real-life perspectives on the life of an oceanographer, which serves as the practical component that complements the theoretical portion (concept mapping).

V. Reflection

As part of an underrepresented group in science, I am very interested in developing ways to engage diverse students with scientific research. Using concept mapping provides an easy opportunity for self-reflection about preset notions regarding the ocean sciences. Having a discussion portion will hopefully allow the students to see differences and similarities in the way they view the field. Incorporating an opportunity to interact with scientists conducting research solidifies the idea that the field of ocean sciences is rich with research and career prospects. This program will help debunk misconceptions regarding the field while introducing the many opportunities in ocean sciences. Through this exposure, I hope that students of diverse backgrounds will become interested in pursuing oceanography or a similar or related discipline.