

## **Future Marine Scientist Academy**

Chincoteague Bay Field Station is committed to providing hands on, feet wet experiences creating career pathways for all students, which is why we are starting the Future Marine Scientist Academy. This program is open to high school students with a goal of preparing them for future careers in marine and environmental science through field and classroom-based learning experiences and professional development opportunities. Along with the marine science courses, students will learn resume building skills, attend practice interview sessions, connect with professionals in the marine and environmental science industry, explore different career and degree tracks within the marine and environmental science field, and gain hands-on experience with field and laboratory equipment.

The course work and field experiences will be based on our current marine and environmental science programming and is intended to cover a wide variety of topics in the field. Courses offered include but are not limited to: Fish Biology, Marine Invertebrates, Marine Mammals, Soil Science, and Coastal Ecology/Oceanography Cruise. Because CBFS has a robust and longstanding relationship with many colleges and universities that offer marine and environmental science courses of study, we are also able to offer participants in the Future Marine Scientist Academy the opportunity for professional development and to connect with professors, college students, and universities that can help them achieve their career goals. At least one session will be dedicated primarily to professional development, including building resumes, interview practice, exploring different college and career options, and networking with professionals in the field. Professional development and networking opportunities will also be woven throughout the program, with opportunities to explore college and university programming, speak with and learn from university professors, participate in college-level programming, and network with leaders in local organizations, such as Chincoteague National Wildlife Refuge and Assateague Island National Seashore. Participants will also work with a variety of Chincoteague Bay Field Station staff, who have diverse backgrounds and skill sets. This program will run one Saturday a month for each school, beginning in April and going through August 2023.

Upon conclusion of the program in August, participants will continue to receive support from Chincoteague Bay Field Station staff. Staff will be available to assist with college applications, networking with colleges and universities or career professionals, internship identification and application, and more. CBFS is committed to continued support for Future Marine Scientist Academy participants to help see them through to their professional goals.

**Each course would be limited to 20 students from each school. Transportation will be provided from the high school to any field sites and back. Lunch is provided.**

**If you are interested in applying please complete the online application by March 10<sup>th</sup>, 2023.**

Specific course descriptions with skills gained are listed below:

**Fish Biology** - Participants will begin in the classroom, learning the anatomy and physiology of fish. They will then participate in a field experience where they will be given the opportunity to use a variety of methods to sample and identify local fish species.

Skills gained: fish identification, safe and proper equipment use (seine net, dip net, fish board, fish viewer), safe organism handling practices

**Marine Invertebrates-** Participants will attend a background lecture to expand their working knowledge of invertebrates and specifically marine invertebrates followed by field-based study of these organisms. Students will participate in organism collection through a variety of sampling methods then work to identify these organisms based on the characteristics discussed in the classroom using field guides.

Skills gained: marine invertebrate identification, safe and proper equipment use (dip net, sieve box, microscope, macroscope), safe organism handling practices

**Marine Mammals-** Participants will learn how scientists identify marine mammals (specifically dolphins) through photo identification starting in the classroom. They will then head out into the field to test their skills on one of our research vessels spotting Bottlenose Dolphins.

Skills gained: photo identification of marine mammals, how to use binoculars, citizen science practices (by taking photos and uploading them to iNaturalist or other platforms specifically for marine mammal documentation), boat safety

**Soil Science-** Participants will start in the classroom learning about ways that soil is formed, different classifications, as well as soil taxonomy. Students will also learn the importance of soil and how to assess soil types. Students will then head into the field and test different soil properties including but not limited to: microorganisms, macroorganisms, fungi, plants, algae, nutrient testing, color, texture and also do a quadrat survey. Students will then make their way back to the lab to investigate organisms in the soil under microscopes and macroscopes.

Skills gained: safe and proper equipment use (shovels, soil probe, quadrats, microscope, macroscope), use soil testing kits, identification of terrestrial organisms

**Professional Development-** Interact with professors, staff, and college students that are on our campus for summer courses to learn more about their fields and experience. Along with tips and tricks for resume building and good interview practices.

Skills gained: resume writing, interview skills, professional and appropriate interaction with colleagues and supervisors, cover letter writing

**Coastal Ecology/Oceanography Cruise-** Beginning in the classroom students will learn about

biotic and abiotic factors of water quality and how to test it. Participants will then join us on an adventure on a research vessel to discover oceanography. Students will collect water samples, test water quality, look at physical water properties, and collect organisms using a trawl net.

Skills gained: water quality testing and analysis, safe and proper equipment use (water quality testing kits, secchi disk, otter trawl net, plankton net), organism identification, proper handling of organisms, boat safety

The skills these students will gain are:

- How to trawl on a boat- otter trawls and plankton tows
- How to collect organisms- dip nets, trawls, seine nets
- Water quality testing
- How to use scientific equipment- microscopes, macroscopes, trawl net, plankton net, seine net, water quality test kits, binoculars
- Identification of marine organisms
- How to utilize a field identification guide and photo identification
- How to safely and effectively handle organisms
- How to collect soil samples
- How to utilize both microscopes and macroscopes in a lab setting
- Resume building techniques
- How to effectively answer interview questions
- How to communicate data collection
- Citizen science practices

**Schedule:** Transportation provided will meet at the high school at 8am and be dropped off no later than 3pm.

April 8th: Arcadia HS

April 22nd: Chincoteague HS

May 6th: Arcadia HS

May 20th: Chincoteague HS

June 3rd: Arcadia HS

June 17th: Chincoteague HS

July 1st: Arcadia HS

July 15th: Chincoteague HS

August 5th: Arcadia HS

August 19th: Chincoteague HS