



OCEANFIRST

INSTITUTE

Marine Science Programs

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Our Mission

Ocean First Institute (OFI) is a non-profit organization based in Colorado and Florida whose mission is Ocean Conservation through Research and Education.

The high connectivity of water means that even a landlocked state can have an impact on waterways further downstream and even into the ocean.

Ocean First Institute (OFI) is a nonprofit based in Boulder, Colorado, that believes bringing Marine Science education, conservation projects, and research to young minds is vital to building a better world.

Overview of Programs



OFI school programs are designed to be flexible in their duration based on the needs of the teacher and the learning center schedule. Getting students to engage through hands-on activities is a priority in each class we teach.

A priority of ours is to adapt to support teachers' instructional goals and all programs are FREE of charge.

Marine Science Programs

Sharks

The Sharks program delves into the fascinating world of sharks, exploring their unique anatomy, diverse species, and varied habitats across the world's oceans. Students will learn about shark reproduction methods, distinctive features, and the significant threats they face, alongside conservation strategies essential for their protection.

Marine Mammals

The Marine Mammals program examines the characteristics, major groups, and unique adaptations of marine mammals. Learn about echolocation, social structures, migration, reproduction, and life cycles, along with the threats they face and conservation efforts to protect them.

Sea Turtles

Explore sea turtle anatomy, species diversity, life cycles, nesting behaviors, and adaptations for survival. Discover their global distribution, habitat preferences, foraging grounds, and the pressing threats they face, along with conservation efforts crucial for their protection and preservation in marine ecosystems.

Marine Reptiles

The Marine Reptiles program delves into the characteristics and diversity of marine reptiles, highlighting their importance in marine ecosystems. Students will learn about their life cycles, reproductive strategies, and habitats, along with their unique adaptations to aquatic life. The program also addresses the threats these reptiles face and the conservation efforts needed to protect them.

Marine Fish

The Marine Fish program offers an in-depth look at cartilaginous and bony fish, focusing on their hydrodynamics, locomotion, and unique adaptations. Explore the significance of both groups in marine ecosystems, their life cycles, and the threats they face, alongside essential conservation strategies to protect these vital marine species.

Marine Invertebrates

The Marine Invertebrates program explores the diverse world of invertebrates and their crucial roles in marine ecosystems. Study various groups, including sponges, cnidarians, marine worms, arthropods, echinoderms, and mollusks, focusing on their adaptations, life cycles, and reproductive strategies. Learn about the threats they face and the conservation efforts necessary to protect these vital organisms and maintain ecological balance.

Arctic Ecosystems

The program covers the Arctic ecosystem, exploring its unique geography, climate, and the critical role of sea ice and glaciers. The program examines the importance of the Arctic Ocean and its marine life, as well as the impact of human activities, including the lifestyles of Indigenous communities. Environmental challenges, particularly climate change and pollution, are addressed, emphasizing the need for conservation efforts to protect this vital region that plays a key role in global climate regulation.

Kelp Forest Ecosystems

This program explores the underwater world of kelp forests, starting with an introduction to kelp and its global distribution. Participants will discover the diverse species that inhabit these ecosystems, with a focus on key species like sea otters. The program also covers the intricate food web of kelp forests, the threats they face, and the conservation efforts to protect these vital marine habitats.

Coral Ecosystems

The Coral Ecosystems program offers a comprehensive look at the distribution, diversity, and importance of coral reefs. Explore the variety of coral species, including hard and soft corals, and understand their mutualistic relationships and reproductive processes. The program also addresses the key threats to coral reefs and highlights conservation efforts to ensure their protection and sustainability.

Deep Sea Ecosystems

This program delves into the mysteries of the deep sea, exploring the vast ocean depths, including the Mariana Trench. It covers the various oceanic zones—from the epipelagic to the hadalpelagic—highlighting unique features like trenches, hydrothermal vents, and seamounts. Students will also learn about the technological inventions enabling deep-sea exploration, the extreme pressure of these environments, and the fascinating creatures that inhabit the deep ocean.

Mangrove Ecosystems

This program explores the unique ecosystems of mangrove forests, covering the types of mangroves, their global distribution, and the diverse wildlife they support. Students will learn about mangrove root systems, reproduction, their ecological importance, and the threats they face, along with conservation efforts to protect these vital habitats.

Evolutionary History: Ocean to Land

The Evolutionary History: Ocean to Land program explores the profound connections between the universe's origins and the emergence of life in the ocean. Students will understand the transition from marine to terrestrial environments, including the evolution of pivotal species like Tiktaalik and early whales. Examine the common ancestry and structures of fish and tetrapods, and understand the concepts of homologous versus analogous structures and how form follows function in the evolution of life.

Climate Change

The Climate Change program provides a comprehensive overview of how climate change impacts the ocean environment. Explore the effects of greenhouse gases, ocean acidification, rising sea levels, and temperature increases on marine life, including coral bleaching. The program also examines the broader social and economic consequences of these changes, highlighting the urgent need for effective mitigation and adaptation strategies.

Unsustainable Fishing

The Unsustainable Fishing program examines the impact of various fishing practices and methods on marine ecosystems. Explore the challenges of overfishing, bycatch, and techniques such as trawl netting, longline fishing, and gillnetting. The program also covers sustainable alternatives like aquaculture and aquaponics, highlighting strategies for minimizing environmental impact and promoting responsible seafood production

Meet Your Instructors

Dr. Mikki McComb-Kobza, *Chief Scientist & Founding Director*



Mikki is interested in using the story of sharks to inspire people to understand what is happening to the ocean today. Her current research focus is on evaluating white shark abundance in the North Atlantic using several different techniques.

Favorite Sea Animal:

Scalloped hammerhead shark

Favorite Outdoor Places: Underwater!

Hobbies: Wildlife photography, Scuba diving, Koi ponds, paddle boards, making people laugh!

Favorite Everyday Environmental Tip: Think about what kind of food you eat and where it comes from. Think about incorporating more plants into your diet. It's good for you and the planet!

Chrissy “Fred” Frederick, *Director of Education*



As OFI’s Director of Education, Chrissy is dedicated to facilitating the exploration of the marine environment through fostering curiosity and environmental stewardship. She is a passionate advocate for ocean literacy and believes that all people should have the ability to learn marine science.

Favorite Sea Animal: Nudibranchs!

Favorite Outdoor Place: Anywhere I can be with dogs and horses

Hobbies: Playing outside and strumming

the ukulele!

Favorite Everyday Environmental Tip: Take the time to be a conscious consumer. Find ways to reduce your consumption and when you must purchase something, support companies that are aligned with your values.

Annie Goyanes, Educational Programs Coordinator



As OFI's Educational Programs Coordinator, Annie's background in nonprofit work and a strong commitment to the community will assist the Director of Education in delivering impactful microplastics and marine science programming for all schools and communities in the Front Range.

Favorite Sea Animal: Greenland Shark

Favorite Outdoor Places:

Monteverde, Costa Rica, and Sand Dunes National Park

Hobbies: Hiking, Biking, cooking, and playing video games

Favorite Everyday Environmental Tip: Order less online to reduce plastic packaging waste!

Contact Information

Contact the Program Coordinator for further questions and to schedule programs.

Email annie@oceanfirstinstitute.org with potential dates and times, number of classes, number of students in each class, and location of school.

Fill out the [evaluation](#) with information and feedback on the program. We appreciate your time in filling this out since this is essential info for grants.

Annie Goyanes

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