

CIRCULATING COPY



COAST NOTES



A Virgin Islands Marine Advisory Services Publication

VIMAS is a branch of

the University of Puerto Rico Sea Grant College Program & the University of the Virgin Islands Eastern Caribbean Center.

Marine Careers Series

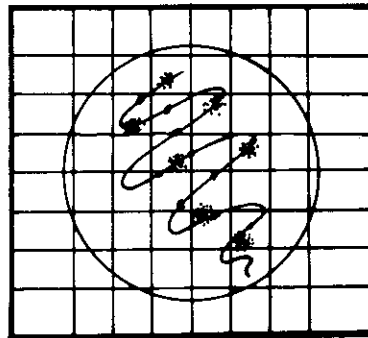
Marine Careers in Medicine and Health

Modern explorations of the ocean have led to the discovery of new organisms and compounds that can be used to improve human health. At the same time, our use of the ocean depths for both work and recreation has created the need for medical professionals capable of treating illnesses such as decompression sickness (the bends).

What types of medical and health careers are marine-related?

Several medical careers are closely related to the marine sciences. More and more physicians are treating diving-related injuries and seafood-borne illnesses. Medical researchers investigate marine compounds and products for their potential use in fighting cancer or other illnesses. The marine environment plays an ever-growing role in the area of medicine and medical research.

A wide variety of marine organisms and the substances they produce have great medicinal value.



Extracts of marine flora and fauna yield numerous compounds that are used as antibiotics, tumor inhibitors, coagulants and anticoagulants. Other substances act to treat heart or nerve ailments.

Coral skeletons have been used in bone replacements, where they function more like human bone than do the plastics that are generally used. Corals, sea anemones, sponges, mollusks, other invertebrates and even sharks and stingrays have all been found to contain substances that are useful in medicine. And yet we've been able to examine only a fraction of all of the marine organisms that have potential human



© Geraci & Lounsbury 1983

health applications and benefits.

Many marine organisms can be used in food and nutrition science. Supplements and food additives can be derived from marine products and used to improve human nutrition and health. Researchers also investigate the toxins that can be found in fish and shellfish, such as ciguatoxins (the cause of ciguatera fish poisoning). Marine researchers may also recommend guidelines for handling and preparing seafood in order to protect human health.

Medical professionals with knowledge of injuries that affect people who work and play in the water are also needed. Recreational and commercial SCUBA divers as well as researchers working in deep water can have accidents that require specific knowledge of depth-related injuries and their treatment.

Education

All medical professions require a college degree. A two-year degree is usually necessary for lab assistants and technicians. A bachelor's degree is required for nutrition researchers. A master's or doctorate degree is required for marine product researchers. Of course, a medical degree is necessary for any practicing physician.

High school students can prepare for a career in any medical or human health related field by completing as many science courses as possible, including biology, chemistry, and physics.

Financial aid, work study and scholarships are often available to help pay college costs. Check with the college or university of your choice for more details. Most universities offer scholarships, fellowships and assistantships or internships for studies at the graduate level.

Medicine and Health Careers

Marine pathologist - studies tissue from diseased or dead marine organisms to identify pathogens.

Diving physiologist - studies the physiological effects of diving on humans.

Environmental health services sanitarian - studies the causes and effects of seafood-borne illnesses related to human handling problems; plans and conducts programs related to sanitation; promotes development and maintenance of health standards; helps to develop laws and regulations related to the handling, dispensing and consumption of seafood.

Marine biomedical specialist - applies medical knowledge to unique health problems encountered by people working in marine environments.

Marine food scientist - studies nutritional value, preparation and preservation techniques, marketing, and new uses for marine food resources.

Marine products chemist - studies diverse marine organisms in hopes of identifying compounds with medical applications.

Marine toxicologist - detects and analyzes poisonous substances in the oceans.

Marine veterinarian - studies and treats illnesses and injuries of marine mammals, fish and invertebrates.

*by Laurie Fletcher-Hall and Lynne Hinkey
VIMAS, St. Thomas*

This is one of a series of Coast Notes on marine careers. The series includes Careers in Marine Biology; Physical and Chemical Oceanography; Ocean Engineering; Medicine and Health; Planning, Management and Legal Professions; and Technical Careers