

Edith A. Widder
Deep-Sea Explorer
Co-founder, President & Sr. Scientist
Ocean Research & Conservation Association
Ft. Pierce, Florida

Dr. Edith “Edie” Widder is a biologist and deep-sea explorer who is applying her expertise in oceanographic research and technological innovation to reversing the worldwide trend of marine ecosystem degradation.

Edie graduated Magna cum laude from Tufts University where she received her BS Degree in Biology. She then went on to earn a Masters Degree in Biochemistry and a Ph.D. in Neurobiology awarded by the University of California in Santa Barbara.

Two years after completing her Ph.D., Dr. Widder became certified as a Scientific Research Pilot for Atmospheric Diving Systems. Edie holds certifications that qualify her to dive the deep diving suit *WASP*, as well as the single-person untethered submersibles *DEEP ROVER* and *DEEP WORKER* and she has made over 250 dives in the *JOHNSON-SEA-LINK* submersibles. Her research involving submersibles has been featured in BBC, PBS, Discovery Channel and National Geographic television productions.

A specialist in bioluminescence (the light chemically produced by many ocean organisms), Dr. Widder has been a leader in helping to design and invent new submersible instrumentation, and equipment to enable unobtrusive deep-sea observations. Working with engineers, she has conceived of and built several unique devices that enable humans to see beneath the waves in new ways, including **HIDEX**, a bathyphotometer which is the U.S. Navy standard for measuring bioluminescence in the ocean; important information for keeping submarines hidden from above. Edie also built **LoLAR**, an ultra-sensitive deep-sea light meter that measures light in the deep ocean, both dim down-welling sunlight and bioluminescence – both important determinants of animal distribution patterns. Most recently, Widder created a remotely operated deep-sea camera system, known as ORCA’s **Eye-in-the-Sea (EITS)**, which, when deployed on the sea floor, automatically detects and measures the bioluminescence of nearby organisms. EITS has produced footage of rare sharks, jellyfish, and discovered a new species of large squid (over six feet in length), all in their natural habitats. Edie and her unobtrusive camera system were recently featured on the Discovery Channel series *Midwater Mysteries* and PBS’s *NOVA ScienceNOW*.

In 2005, Dr. Widder resigned from her 16 year post at Harbor Branch Oceanographic Institution to co-found the **Ocean Research & Conservation Association (ORCA)**, a non-profit organization dedicated to the protection of marine ecosystems and the species they sustain through development of innovative technologies and science-based conservation action. While translating complex scientific issues into technological solutions, Dr. Widder is fostering greater understanding of ocean life as a means to better, more informed stewardship. In September of 2006, based on her work with ORCA, Edie was awarded a prestigious MacArthur Fellowship from the John D. and Catherine T. MacArthur Foundation.

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