The fictitious Ocean Science Quest tabloid newspapers in the Fisher Hall museum display cabinet treat the sea otter in the kelp forest ecosystem as fact and as metaphor. The author discusses the structure and evolution of physical and biological systems and thematic interpretation of natural history. This talk is for students and faculty interested in marine ecosystems, thermoregulation, photobiology, the origin of life, molecular and cellular evolution, and/or science education.
The Cal Poly Library is exhibiting Dr. Bob Field's new Ocean Science Quest (OSQ) poster display on the first floor by the elevators until the end of October. The display explores interactions of energy and matter in the oceans, atmosphere, solid Earth, and Sun and is intended to appeal to high school and college students and teachers in physics, chemistry, biology, mathematics, and the Earth sciences.

The Quest provides opportunities to exercise conceptual thinking skills by observing and analyzing natural systems. By emphasizing Cal Poly’s learn by doing philosophy, the Quest may apply to classrooms, field trips, student projects, research projects, seminars, teacher workshops, library programs, and science museums.
Dr. Bob Field's new Ocean Science Quest (OSQ) exhibit is on display on the first floor of the Cal Poly Library until the end of October. Provocative, informative, and entertaining stories of a sea otter, a kelp forest, seasonal change, tide pools, and global climate are featured in eight fictitious "Daily Sea Star" and "Natural Enquirer" tabloid newspapers.

The poster display explores the diversity and abundance of life and interactions of energy and matter in the oceans, atmosphere, solid Earth, and Sun. Truth is stranger than fiction and the sea otter and the kelp forest become metaphors for the entire ocean and life everywhere, all of which depend on sunlight, gravity, and heat transfer.

The exhibit is open to the general public and should interest high school and college students and teachers in physics, chemistry, biology, mathematics, and the Earth sciences. Check campus parking rules and library hours before your visit. Parking is normally free on weekends and the library opens at 10 am.

30-minute guided tours of Ocean Science Quest exhibit: Saturday October 11 and 18 at 2 pm at Cal Poly library
The Ocean Science Quest ROAD Reporters Workshop is a hands-on thematic workshop that will use Cal Poly's learn-by-doing philosophy to produce a student edition of my "Natural Enquirer" tabloid newspaper. Students will examine my tabloids, discuss big ideas, observe nature, read books, and create short stories with words and pictures for a fictitious newspaper using original or borrowed artwork and photographs. Participants must attend all sessions of the workshop. Field trips and other events will be optional.

The workshop emphasizes four activities that will put you on the ROAD to preparing a thematic short science story or talk. You must Read, Observe, Analyze, and Discuss natural science to develop themes and insights before you plunk down an arbitrary set of words and pictures. The theme and the content should be interesting and important. Reading includes books, newspapers, science magazines, scientific publications, and websites. Reading thematically is not easy: it requires focusing on a goal or question, not just absorbing interesting facts and figures. Observing usually requires your eyes and your brain. Sometimes it involves specialized instruments to enhance or quantify your observations, sometimes it occurs in a remote field location and sometimes it occurs in a laboratory under controlled unnatural conditions. Analysis is very difficult - it involves thinking. For scientists, it often involves mathematics, especially in order to understand global phenomena that result from the interaction of many variable parameters. Discussions can be fun, informative, and challenging if you participate. You can try your ideas out on other people to see if they understand you, to see if your ideas are interesting and important to them, to see if they have advice or information of value to you, and to enjoy sharing ideas with other like-minded people. Writing and generating illustrations tends to be a solitary experience, which becomes even lonelier when you ask others to review your work and critique it.

Eight fictitious "Daily Sea Star" and "Natural Enquirer" tabloid newspapers collectively explore the theme that the diversity, abundance, and distribution of life depend on interactions of energy and matter in the oceans, atmosphere, solid Earth, and Sun. The truth-is-stranger-than-fiction approach is intended to be provocative, informative, and entertaining. The story begins with sea otters in a kelp forest and explores a series of global themes emphasizing sunlight, gravity, and thermoregulation. Some readers may recognize elements of Dr. Art Sussman's systems (energy, matter, and the web of life) and Sam Ham's thematic interpretation principles.

1 Sea Otters
The sea otter struggles to survive in a chilly habitat that is not naturally suitable for warm-blooded animals, particularly small, furry ones with little body fat. The sea otter is at the top of a food web based on the absorption of sunlight.

2 Kelp Forest
The kelp forest is the dominant energy collector in an ecosystem that is heavily influenced by the sea otter. The limited range of the kelp forest is the result of compromises inherent in its adaptations to a subtidal ecological niche.

3 Ocean Systems
Like the sea otter and the kelp forest, the liquid ocean itself is an open system that survives only through the absorption of solar energy that offsets its continuous heat loss.

4 Seasonal Change
The rhythm of life and the survival of liquid oceans depend on seasonal changes of astronomical origin.

5 Animal Diversity
The diversity, abundance, and distribution of animals depend on interactions of the Sun and the land with the oceans.

6 Tide Pools
The distribution of life in the extreme environment of a tide pool depends on solar, lunar, and global forces that influence tides.

7 Global Climate
The absorption and scattering of sunlight by the atmosphere, oceans, and continents determine the global climate that is essential to liquid oceans and to life on Earth.

8 Ocean Science Quest
Readers are invited to read, observe, analyze, and discuss the themes of global natural science by visiting the library, exploring nature, doing science projects, and taking courses, workshops, and seminars.
Many bright and colorful sights on the central coast result from an optical phenomenon called iridescence. Unlike the ordinary colors reflected by pigments, the dazzling colors of iridescent creatures reveal the presence of extraordinary submicroscopic structures. The physics behind the iridescent objects is as fascinating as the colors themselves. The general term for colors produced without pigments is structural color. Other natural structural colors include refraction and scattering of light resulting in rainbows and sunsets.