

Bay Lines

MARINE
SCIENCE
INSTITUTE

500 Discovery Parkway
Redwood City, CA 94063-4715



DISCOVERING OUR BAY

Fall
2006

www.sfbaymsi.org

All Aboard!

The *R/V Robert G. Brownlee* will soon be open to the public! During the summer break, MSI hauled out the *Brownlee* for routine maintenance as well as upgrades. With the help from some key funders, including the Bothin Foundation and Danford Foundation, we modified the ship to meet U.S. Coast Guard standards of a charter vessel.

Notably the ship has a fresh new paint job, wider doors and an automated fire-fighting system in the engine room. This new classification will allow MSI to offer the *Brownlee* to the general public as a ship for hire. These additional revenues will support our educational school programs. While staying true to our mission we are excited about the opportunity to broaden our reach to include not just schools, but the entire Bay Area community.

Keep your ears open for the start of the public Discovery Voyages soon.



Chronicle / Michael Macor

Better than a whale watch trip, the *Brownlee* will soon be offering trips to the general public; enabling people throughout the Bay Area to see *and touch* live animals from the Bay such as bat rays, crabs and leopard sharks.

Inaugural Intersession Marine Camp a Success

Riding on the success of our *Summer Marine Camp*, MSI launched the first ever *Intersession Marine Camp*. This camp was developed especially for students of year-round elementary and middle schools in the San Mateo-Foster City Unified School District. During the week of October 9th, 22 students in grades 3 through 8 experienced first-hand the wonders of California's coastal habitats. From the rocky shore and sandy beach to the kelp forest, estuary and open ocean, cam-



Three excited campers board the ship in preparation for an afternoon Discovery Voyage.

pers joined in on games, crafts, workshops, a Princeton harbor tour and, of course, an afternoon Discovery Voyage on the Bay. Thanks to all campers for a wonderful week — we are already looking forward to next year!

Development Audit

MSI received a grant from the Packard Foundation's Organizational Effectiveness program and is working with Bob Zimmerman of Zimmerman-Lehman to explore untapped fundraising opportunities and to help place MSI in a position to conduct a capital campaign in the next few years. This is the first time MSI has had a development audit and we are thrilled to have been given this opportunity.

A Salute To Our Funders

The Marine Science Institute receives grant support from many different foundations and businesses. We would like to recognize those who helped MSI bring science to life in the past year.

\$100,000+

Robert Brownlee Foundation

\$50,000 — \$99,999

David & Lucile Packard Foundation

\$25,000 — \$49,999

Bothin Foundation
Sidney S. Byers Charitable Trust
Toyota, USA

\$15,000 — \$24,999

Cisco Systems Foundation
Crescent Porter Hale Foundation
Dean & Margaret Leshner Foundation
Peninsula Community Foundation
Wayne & Gladys Valley Foundation

\$10,000 — \$14,999

Danford Foundation (Hanning Law Firm)
Sand Hill Foundation
Symantec Corporation
Synopsis
Verizon Wireless

\$5,000 — \$9,999

A&B Foundation
Alza Corporation
Bernard Osher Foundation
California Casualty Group
City of San José
Community Foundation of Silicon Valley
Dow Chemical Company Foundation
Frieda C. Fox Foundation
Lockheed Martin Missiles & Space
Myrtle L. Atkinson Foundation
San Francisco Estuary Project
South Bayside System Authority
Turner Designs
Y & H Soda Foundation

\$1 — \$4,999

AAA—San Francisco
BAE Systems (formerly United Defense)
Corrigan-Walla Foundation
Dawson Family Fund
Dirk & Charlene Kabcenell Foundation
Doering Family Foundation
Jones & Stokes
Scandling Family Foundation
Wells Fargo Foundation

Meet the Staff

Erik Larson – Captain

Erik grew up in the Los Gatos/Cupertino area but his love for the ocean led him to Santa Cruz. After graduating from UCSC and then CSU Monterey Bay, Erik has captained a number of boats part time, including a scuba charter boat, MSI's research vessel and just recently accepted a job with NOAA. He has been MSI's Monday/Tuesday captain on the *Brownlee* for over 4 years. While not working on a boat, Erik loves surfing and skiing as well as playing drums with some of his friends' bands.



Fun Facts

- ◆ Blue whales have the loudest voice in the animal kingdom. They emit low-frequency sounds that travel hundreds of miles.
- ◆ The Port of Redwood City is the only port in South San Francisco Bay. With a large-scale auto recycling facility, it processes over 200,000 cars per year and exports the scrap metal to the Far East and Asia.
- ◆ Under optimal conditions, diatoms (a type of phytoplankton) have doubling rates of 0.5—6 per day. This means that a possible 16 MILLION diatoms can be created from one diatom in just over 4 days.

Bay Lines

Tyler Hammer, Producer & Writer
Andrea Swensrud, Editor

MSI Board of Directors

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Translating the Tides

Undiced Beauty

Daily you pass by this beautiful place
 Never really stopping to think about what fills the space.
 A space full of life that we must protect
 Our actions on this beautiful place will reflect.
 This place is more than a bay, it is a sanctuary
 Or more technically an estuary.
 The Bay is a place we want for our children
 A place whose beauty will never end.
 Daily you pass by this beautiful place
 Stop to think about what fills this space.
 Remember that the bay's future depends on us to take
 care of it
 So if for years to come by the edge of the water you
 want to sit
 Take pride in the bay
 And it will always stay.

Tiffany Shicker
 High School

Program Funder: Morris Stulsaft Foundation

A Warm Welcome & Fond Farewell

I am delighted to introduce MSI's new Membership & Volunteer Coordinator—**Aaron Tinker**. Aaron comes to MSI with over 15 years of marine biology, education and nonprofit experience and we are thrilled to have him on board. Aaron will no doubt serve MSI's mission, members and volunteers well.

I would also like to take this opportunity to say **Thank You** to our members and donors one last time! After two and a half years as part of the MSI family I have decided to move on and pursue my goals of working in the sustainable business field. My time here has been a real joy; whether interacting with MSI members, staff, camp families, foundations, corporations or volunteers I have been deeply moved and inspired by everyone's shared commitment to the cause of exciting stewardship for the marine environment among children.

Best wishes,

Tyler Hammer

Life in the Bay

Nudibranch — *Hermisenda crassicornis*

There is an old idiom that declares, "*You are what you eat!*" Indeed, we all grow up with our mothers warning us against the dangers of eating too much *bad junk food*. I grew up with a fearful image of my future self looking something like Pizza the Hut from the movie "Space Balls".

The nudibranch, however, has whole-heartedly embraced that age-old saying and actually uses the "*bad junk food*" they eat for their very survival.

With a weakness for hydroids and other animals with poisonous stinging cells, nudibranchs seem to have thumbed their noses at that old idiom.

Amazingly, nudibranchs have evolved a defense mechanism in which they collect and store the stinging cells (nematocysts) they ingest to ward off predators. Luckily, humans have nothing to worry about because these nematocysts, once inside the nudibranchs, cannot penetrate our skin.

Their finger-like organs, or cerata, rise up from the body and carry the nematocysts. The cerata also help in the digestion process as well as respiration by acting as the animal's gills.

Most nudibranchs are strictly hermaphroditic their whole life span—that is, they possess male and female reproductive organs. But some are born primarily male, and become female with age.

This species of nudibranch is most likely to turn up in MSI's net while trawling the central bay off San Francisco and Richmond. Tide pools are also an excellent place to spot these beautiful creatures. In fact, this nudibranch can be found all up and down the west coast from Baja California to Alaska.



Photo: John Albers-Mead

Like many amphibians, this nudibranch evolved bright colorations to warn predators of their toxicity.



FALL EVENTS 2006

A SCHMAHL SCIENCE WORKSHOP - PLATE TECTONICS & VOLCANOES!

Saturday, October 21st

2:00pm ~ 3:00pm

Drop on by the Marine Science Institute for a Schmahl Science Workshop (www.schmahlscience.org/). Discover the wonders of plate tectonics and volcanoes with exploding hair gel, Alka Seltzer–baking soda volcanoes, Fig Newton convergent zones and Milky Way divergent zones! Through exciting and fun hands-on activities, students will learn about the types of volcanoes and how they relate to plate boundaries, what makes some volcanoes more dangerous than others, volcanic rocks and landforms, and how volcanic eruptions affect the climate and life on Earth. This program is recommended for children 7 and above. Cost: \$10/student. To register call MSI at 650-364-2760 x16.

DISCOVERY VOYAGE IN SAN FRANCISCO!

Saturday, November 18th

10:00am ~ 12:00noon

Back for an encore, we are offering another Discovery Voyage for MSI members this fall. Departing from the harbor right next to the Giants Stadium in downtown San Francisco, this voyage offers you a unique opportunity to see the San Francisco skyline, Golden Gate and Bay Bridges and Alcatraz from Central SF Bay. At the same time, delve through mud samples to discover the fascinating invertebrates that thrive at the bottom of the Bay, use a trawl to catch a wide variety of fish species, including sharks and rays, and catch plankton to view under a microscope! These voyages are for MSI members only. Must be at least 4 years old to attend, and ALL children must be accompanied and supervised by an adult. This is a **FREE** event, but donations are warmly welcomed. Space is limited - Online Registration Required.

SEASIDE STORY HOUR - ROCKY SHORE: FISH

Saturday, November 18th

11:00am ~ 12:00noon

Join MSI naturalists for tales of the Rocky Shore and touch live fish from this harsh, but beautiful environment. This **FREE** event is held on the third Saturday of every month (except August & December) at the Redwood City Library's Main Branch on 1044 Middlefield Road in downtown Redwood City.

CALL TO RESCUE WITH THE MARINE MAMMAL CENTER

Saturday, December 9th

11:00am ~ 12:30pm

Learn what it takes to be a marine mammal rescuer - from the experts! Help staff at the Marine Mammal Center (www.tmmc.org) rescue and rehabilitate a stranded "seal" (a seal model is used) in a simulation activity. Starting on the beach, you will participate in a mock rescue. Observe the "stranded seal", assess its condition and use real equipment to rescue it. You will transport the "seal" to our classroom, where you will learn about the tools and techniques used to care for our marine mammal patients. Then watch video clips of actual animal care procedures. Using the seal model, Marine Mammal Center staff will demonstrate feeding and animal care procedures. Finally, with hands-on specimens, you will explore the differences between seals, sea lions, and otters. This program takes place at the Marine Mammal Center in the Marin Headlands. Must be at least 6 years old to attend. Cost: \$10/person. To register, contact MSI at 650-364-2760 x16.