



*Winter 2011*  
[www.waquarium.org](http://www.waquarium.org)

looking at the sea



**QUARANTINE:**  
**THE FIRST LINE OF DEFENSE**  
CLASS CALENDAR



# FROM THE DIRECTOR

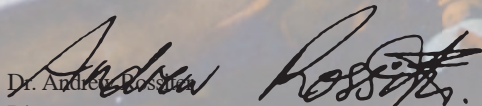
One of the stimulating things about working at the Aquarium is that you never know what each day will bring. Caring for live animals means that we are a 365-days-per-year, 24-hours-a-day operation and, for senior staff, schedules are not entirely predictable and weekends and personal time are not sacred. Take a recent Sunday morning as an example. At around 7 a.m. I received a call from one of our staff that, "The pump room has flooded, all the electricity is off and all the fish are dying." Quite an attention grabber!

Within 20 minutes I was at the Aquarium, expecting the worst. Several of our staff were at the trapdoor to the subterranean seal pool pump room, where water could be seen seeping up from beneath. Jerry Crow, our Facilities Manager, had also come in on his day off to address the emergency. Having switched off all the electrical breakers, we opened the trapdoors to find the pump room submerged to the ceiling beneath eight feet of saltwater.

We ascertained that only a section of the electric system was affected, and staff arranged for generators and an air supply to those few exhibits on the lawn that were down. At around 7:40 a.m. I contacted U.H. Vice Chancellor Gary Ostrander, my supervisor, to report the emergency. Almost immediately he approved emergency funding and, within 10 minutes, he called back to confirm that Chancellor Virginia Hinshaw was in full support.

In the interim, one staff member went to get a large sump pump and four-inch hose, which was used to pump the water onto our salt-tolerant lawn. By 3 p.m. the water in the pump room was only about one-foot deep and the source of the problem was revealed: a heavy-duty pipe had sheared in half, flooding water into the room. We were able to remove all the water from the room, but everything was soaked and covered in a layer of oil that had leaked from the pumps. All the electrical equipment was ruined — pumps, filters, ozone machine, lights, fixtures — the breaker boxes had blown open as the saltwater reached them.

At 4 p.m. Jerry and I called it a day and went to our respective homes for a very late breakfast. The prompt actions of all involved in this emergency minimized down time: accessory power lines were set up, backup pumps were installed, and the seal pool filters and outside exhibits were soon up and running. Several weeks later the pump room was almost like new. Some positives can be drawn from this incident. No one was injured, the event was a good team exercise that required many moving parts working together, and the swift and positive response from U.H. administrators was greatly appreciated. We were able to save all but one fish, the Fiji foxface rabbitfish, which, at 25 years of age, was our oldest Aquarium resident. And, oh yes: The lawn has never looked better!

  
Dr. Andrew Ross  
Director



“The event was a good team exercise that required many moving parts working together”

*Kilo i'a*

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FEBRUARY

## IT'S A WHALE OF A TIME

The humpback whales are back in the islands after making their annual migration from Alaska — the longest migration among mammals. In February, Hawai'i celebrates the humpback whales and NOAA's sanctuary staff will be at the Aquarium with educational activities, plus we'll be showing the award-winning film *In the Wake of Giants*.

The short documentary takes you on a Hawai'i research vessel as a small network of well-trained volunteer rescuers risk their lives to save humpback whales that are entangled in marine debris. The film won the BLUE

Ocean Film Festival award for the category of National Marine Sanctuary Short.

You can also get involved by joining in the Sanctuary Ocean Count. The Hawaiian Islands Humpback Whale National Marine Sanctuary gives the community a chance to monitor humpback whales from the shores of O'ahu, Hawai'i and Kaua'i on Jan. 29, Feb. 26 and March 26. It's a fun activity and it also helps provide important population and distribution information on humpback whales around the Hawaiian Islands.

For more information, go to [www.hawaiihumpbackwhale.noaa.gov](http://www.hawaiihumpbackwhale.noaa.gov). To register, go to [www.sanctuaryoceancount.org](http://www.sanctuaryoceancount.org).

# THE FISH IN THE FLOAT

Meet the spotted knifejaw with an interesting tale. As a young fish in the Northwestern Hawaiian Islands it started its life inside a fishing float — an old piece of marine debris bobbing around on the ocean.

The float was pulled from the water by researchers onboard NOAA's ship Hi'ialakai. They were astounded to find the knifejaw living inside. It's unlikely that the fish — then about two inches long — would have been able to swim free of the float, which would have become a deadly

prison rather than a shelter.

The Aquarium's Rick Klobuchar was onboard the Hi'ialakai at the time and brought the knifejaw back to O'ahu with him. Since it's been here, behind the scenes, the knifejaw has grown to more than three inches. When fully grown it could reach more than two feet in length.

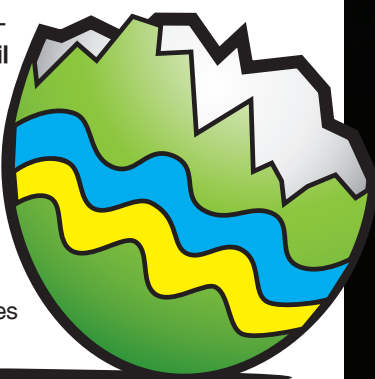
Keep an eye out for the knifejaw when it goes in the galleries; this will be the first time the Aquarium has ever exhibited one of its kind.

The spotted knifejaw, *Oplegnathus punctatus*, is also sometimes called a false parrotfish because its teeth are fused into a sharp beak that it uses to crush molluscs and other shelled animals.

## save the dates

Sea Hunt will be hopping our way on **April 16**. Watch your mailbox or visit [www.waquarium.org](http://www.waquarium.org) for details.

And come help us celebrate Earth Day on **April 9** with plenty of crafts, games and learning.



## Waikīkī Aquarium, Uncovered!

Starting this year we are offering staff led private tours that show you the Waikīkī Aquarium, uncovered! The tours are especially tailored for groups and will take you on an exclusive after-hours tour of the Aquarium with a special trip behind the scenes. Climb up and peer into the tops of the tanks. Visit the quarantine area to find out what animals are waiting in the wings to go on exhibit. Discover the (sometimes fragrant) gastronomies of fish food. Learn the secrets of raising corals and giant clams. Then go into the exhibits for a private tour, without the crowds.

The next time you are looking for a special activity for your group or club or family reunion, think Waikīkī Aquarium. Turn to page 6 for more information on programs available for groups.



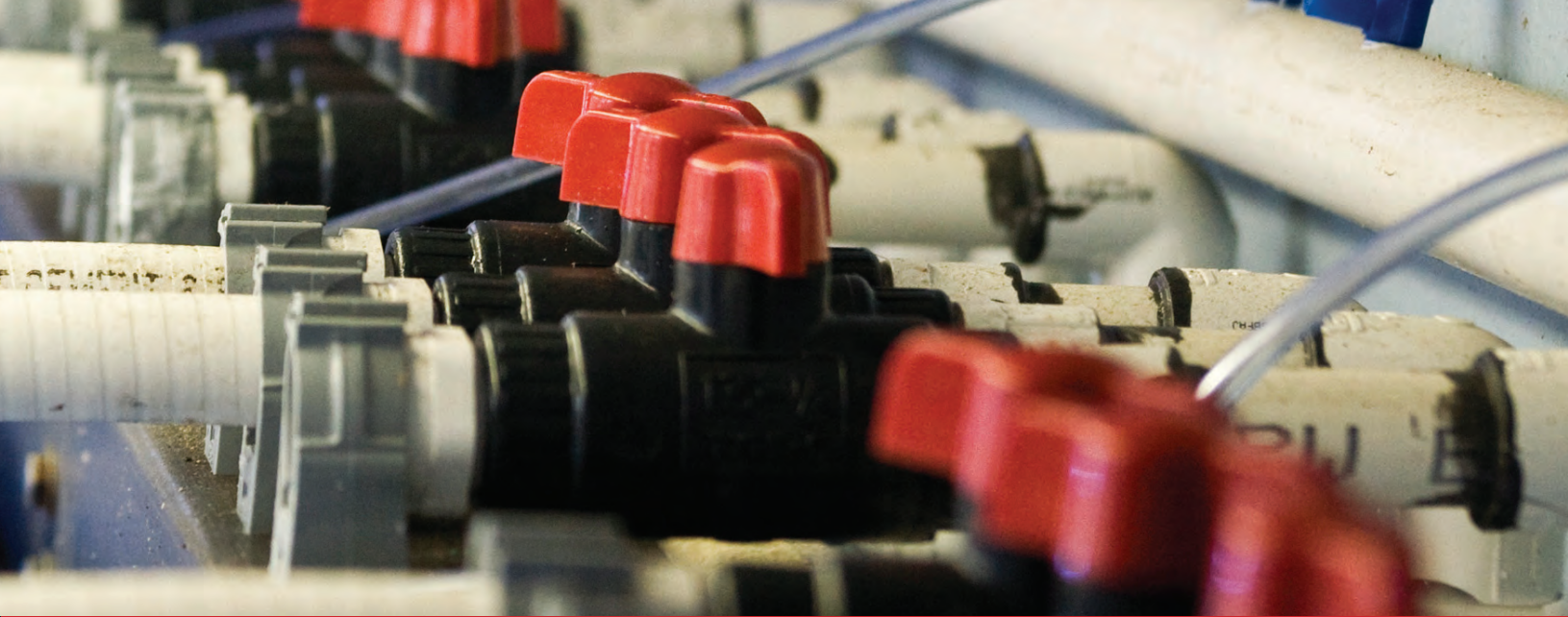
Aquarium disease specialist Eric Curtis keeps a sharp eye for potential problems while feeding fishes in the Aquarium's quarantine system. Photos: Alice Keesing.

# QUARANTINE



Quarantine tanks are not the five-star accommodation of aquariums. While live rock may provide a habitat that the animals are more comfortable in, their stay in quarantine is most likely to be spent with PVC pipes. Aquarists are better able to observe the fish in this environment, not to mention the fact that some treatments could be lethal for corals.





# THE FIRST LINE OF DEFENSE

**C**ryptocaryon, Uronema, Flexibacter ... These are just a few of the arsenal of parasites and diseases that lurk in the ocean. When they hitch a ride into an aquarium, they can cause untold trouble and ultimately kill an entire system. Any aquarium's first line of defense against these trouble makers is a rigorous quarantine procedure. The Waikī Aquarium recently upgraded and improved its quarantine abilities; more than doubling its capacity and giving our aquarists new flexibility to keep our valuable live collection healthy.

The new system was made possible thanks to the generous support of the FOWA board, using revenues and donations from members like you. Aquarium disease specialist Eric Curtis now oversees two quarantine systems behind the scenes. Each system contains a bank of 10 tanks; seven smaller tanks and three larger ones. There are more, even larger, tanks set up on the research deck that can accommodate the larger animals and more active swimmers, such as the sharks.

When you exhibit everything from tiny freshwater gobies to large, open ocean sharks, you need a quarantine system that is flexible enough to accommodate diverse needs. The new system allows aquarists to easily manipulate the conditions in each tank, such as water flow, water quality and temperature.

Pulling together input from the Live Exhibits team, Curtis designed the system to capitalize on the Aquarium's rather unique availability of water resources, which includes freshwater, natural seawater and relatively pathogen-free saltwater from the well that draws from 85 feet under the Aquarium. Each quarantine tank has three input valves that aquarists can use to control the flow of each water source.

This set-up showed its value recently when Curtis was working with a herd of seahorses that had *Cryptocaryon* in their gills. The usual treatment for this was not working because the *Cryptocaryon* were relatively sheltered inside the animals' gills. So Curtis instead opted to lower the salinity in the seahorses' quarantine tank. He was easily able to do this by opening the freshwater and the saltwater well valves into their tank at the same time. The seahorses were able to tolerate the gradual change in salinity. The *Cryptocaryon* were not.

"When we can treat the animals without resorting to chemicals or drugs, it's just a win-win situation," Curtis says. "It's less stressful on the fish and it's less stressful on the environment."

Every new animal arriving at the Aquarium goes into the quarantine system, where it stays for around one month. While there, wild-caught animals have time to adjust to being fed by humans and to the varied diet on offer.

During his morning and evening rounds, Curtis observes each animal, alert for anything that might signal a problem. He watches for blotches or spots that could be parasites or disease. He also watches for weight loss, color changes and unusual swimming behaviors.

Curtis is well-versed in the behaviors of the animals that the Aquarium typically exhibits. He knows, for example, that wrasses commonly lie on their sides on the bottom of their tank. More than once, visiting veterinary students have been alarmed by the behavior.

"A big part of this is knowing what is normal," Curtis says. "If you don't know that wrasses do this, then you might start trying to treat the animal unnecessarily."

Still, there are those times when puzzling situations do arise. Alarm bells went off recently when a school of valuable masked angels collected in the Northwestern Hawaiian Islands started having buoyancy issues. Positive buoyancy can signal any number of potential problems, some of which can be fatal. After observing the animals for a time, however, Curtis figured out that the fish were gassy after eating the bubbles from their tank's air lines. They were quite easily expelling the gas on their own. And Curtis was able to breath a sigh of relief.

## DID YOU KNOW?

In the historical sense, the term "quarantine" denoted a term of 40 days.

In the late 14th Century, the Venetians would keep ships from plague-stricken countries waiting off their port for 40 days.

In the 1520s, the term defined the 40 days in which a widow had the right to remain in her dead husband's house.

Today, quarantine can mean varying lengths of time; in the aquarium business, 30 days is the gold standard for an animal's stop-over in quarantine.



# figuring OUT

## >> the nuts and bolts of the Aquarium's quarantine system

**512** The number of stainless steel flat washers used to build the new stands in the Aquarium's renovated quarantine system.

**60** The number of 1/2 inch ball valves used for the fill line manifolds.

**720** The number of PVC pipe ends beveled to help with better bonding.

**120** The total number of holes drilled into the 20 acrylic tanks and tops for drains, airlines, fill lines and feed holes.

**3.5** The number of cans of fiberglass sealer used to seal cuts and holes drilled into the fiberglass.

**111 1/8** The number of inches each system measures in length.



The Aquarium is always seeking value-added experiences for its members and visitors and, on **Feb. 19 and 20**, will host the 4th Annual International Aloha Koi Show, held in conjunction with the 5th Japan Nishikigoi Expo. This is the biggest koi show in Hawai'i and one of the major koi shows in the United States.

Correctly referred to as "nishikigoi" (brocaded carp), koi are the national fish of Japan and are widely prized by collectors around the world. Koi bridge a cultural divide between the East and West, while also teaching us about the power of evolution. Nishikigoi originated from the muddy, brown-colored common carp. Japanese breeders took several wild carp that showed reddish or whitish body color mutations and, over decades of extensive artificial selection, they produced koi with a myriad of bright color patterns and a characteristic, highly appraised body form. Just as in breeds of dog, the color patterns and body shape have become fixed, but, unlike dogs (*Canis familiaris*) and their ancestor, the wolf (*Canis lupus*), nishikigoi and wild carp remain the same species, *Cyprinus carpio*, and can successfully interbreed.

The koi show is a unique opportunity to see hundreds of top quality koi at one time. Exactly what makes a "quality" koi? Come and see for yourself and learn about koi keeping firsthand at the seminar presentations by international koi experts. This is a fun day for the whole family, with presentations from a ninja group, taiko drummers and hula dancers. Food and refreshments are available. Entry is free to Aquarium visitors. The show runs from 9 a.m. to 5 p.m. on Feb. 19 and 9 a.m. to 2 p.m. on Feb. 20.



## Do it With a Group

Did you know that you can book Aquarium classes for entire groups? We have a range of activities that are perfect for everyone from keiki to tutu, from scout troops to community groups.

**Fish School** is for everyone. Learn what makes a fish a fish and enjoy a scavenger hunt through the exhibits. Or come down when the lights are low and experience the **Aquarium After Dark**. The **Marine Munchies** class gives you exclusive access to the Aquarium after-hours and you get to feed the animals yourself. Or we can arrange a **special presentation** for your group on anything from the science of coral reefs, to Hawaiian shoreline and reef communities.

For a list of group offerings and prices, go to [www.waquarium.org/community-programs.html](http://www.waquarium.org/community-programs.html); scroll down to the bottom and "click here" for a downloadable pdf.



# BEHIND THE SCENES

## LIVE EXHIBITS

Behind the scenes at the Waikiki Aquarium — it's a place where pumps constantly hum, where it's often damp underfoot, where you get the occasional pungent waft of fish food. It's also where you'll find our Live Exhibits staff, sometimes in wetsuits and masks and always busy. They're among the best in the business, adept at taking care of the fussiest feeders, the trickiest corals and the odd emergent situation.

### MICROALGAE FARMING

On Friday morning, aquarist Norton Chan heads into the Aquarium's lab to tend to his algae cultures. The bubbling glass flasks of green and brown algae are the first step in a food chain that the Aquarium uses to feed many of its animals. This food chain, which the Aquarium has kept running for more than 10 years, is also the source of the success for many of the Aquarium's breeding achievements.

The week before, Chan had started the weekly cycle by filling two new flasks with fresh seawater. He then added bleach to sterilize the water.

Today, he takes the sterilized water and seeds the new culture. First he neutralizes the bleach using sodium thiosulfate. Then he adds fertilizer and inoculates the water with a small sample of algae from the previous week's cycle.

Chan measures the materials in a pipette, taking great care not to introduce any contamination. If the process is not sterile, the entire culture could crash. The Aquarium has kept the green *Tetraselmis chuii* culture running for more than 10 years; the brown *Chaetoceros gracilis* algae has been grown for around six years.

Chan notes the start date and algae type in black marker on the flasks, which then go onto the algae shelf. An air tube is inserted to keep the water aerated and to keep the algae from settling out in the water and creating a dead layer. The flasks bubble away for a week and the water gradually changes from clear to green and brown as the algae multiply.

Chan then takes the flasks started the week before onto the research deck outside, where he adds the algae to 100-litre barrels where they continue to grow out. These bubbling barrels of chocolate brown and jade green algae are then used to feed the next step in the food chain: the copepods and rotifers — zooplankters that are then fed to some of the Aquarium's animals, primarily the filter feeders.

The copepod culture is *Euterpina acutifrons*, which was harvested from Kāne'ohe Bay. The Aquarium started this culture more than 20 years ago in its mahimahi breeding program.

Chan repeatedly rinses all the equipment and barrels with freshwater to keep the different sources from cross-contaminating each other; if the rotifers get into the copepod barrel, they will quickly out-compete the copepods and the Aquarium could lose its supply. Chan also keeps a constant turn over in the barrels — if a culture is left too long it will exhaust its food supply and die.

When it's time to feed the animals in the exhibits and behind the scenes, Chan runs the copepod or rotifer barrel water through micron sieves that catch a fine film of living food. Without this food chain, the Aquarium would not be able to raise many larval fish, which need the small zooplankton as their starter food. The Aquarium's landmark achievements in propagating masked angelfish, as well as clownfish and



seahorses, have been thanks, in large part, to this reliable food source.

With a new crop brewing on the research deck, Chan heads back to the lab, where he cleans and sets up the flasks ready to start the entire cycle all over again the next week.





**Name** Karen J. Holman

**Position** Interpretive Program Coordinator

**In the past,** I have worked as a biological technician and field camp leader in the Northwestern Hawaiian Islands, where I spent three seasons living on Laysan Island monitoring endangered Hawaiian monk seals. I have worked as an interpreter on boats visiting the Great Barrier Reef and have researched wild populations of dolphins and dugongs off the coast of Australia. Before returning to Hawai'i, I lived in Kenya for one year studying primates, and traveled throughout Sri Lanka and Cambodia, assisting on projects with elephants and the Mekong river dolphin. More recently, I have worked as an environmental educator at the Hawai'i Nature Center and as a science educator at the Bishop Museum.

**Education** I attended high school at the École Active Bilingue in Paris, France. I began university in New York City at Barnard College and Columbia University then finished my degree at James Cook University in Australia. I majored in psychology and anthropology but also pursued independent research on mother-infant vocalizations in bottlenose dolphins and chimpanzee cognition and tool use.

**My roots** are spread across the Earth. Although an American citizen, culturally I relate most strongly to England and France, where I grew up from age 6 to 18. However, the back of Pālolo valley is also my home and I consider the Hawaiian Islands to be a large part of who I am culturally and spiritually. I am also strongly connected with Australia where I lived for some time. While there I became a wildlife carer, raising orphaned and injured kangaroos, snakes, possums and birds of prey. Nothing beats doing your grocery shopping with two little joeys in a pouch slung over your shoulder!

**I will never forget** the diversity and vibrancy of the Great Barrier Reef, the abundance of life in the waters surrounding Laysan Island, and the songs of humpback whales filling the sea around me. I am also forever shaped by a night of swimming with large manta rays off Kona. The grace in their movement is humbling and reminds me of soaring albatross.

**Interests** I am an avid ocean explorer of all sorts and have always been enchanted by the sea. If only I could breathe underwater endlessly.... When I am not in the ocean, I enjoy writing about and photographing nature. I practice la'au lapa'au (Hawaiian plant medicine) and love to plant seeds and grow as much of my own food as possible. I have always been an explorer and am actively involved in the Polynesian Voyaging Society in several ways, including training as a crew member for Hōkūle'a's voyage around the world.

**I wanted to join the Waikiki Aquarium team because** I am passionate about ocean education and conservation. I am also deeply concerned about increasing pressures on the ocean and for the planet as a whole. I hope to encourage stewardship in order to preserve biodiversity, to enable future generations to have healthy resources and continue to marvel at the wonders of the sea. This is our responsibility, our kuleana.

**Name** Chase Kawakami

**Position** IT specialist

**Education** McKinley High School; UH-Mānoa, BS in Information & Computer Sciences (1996)

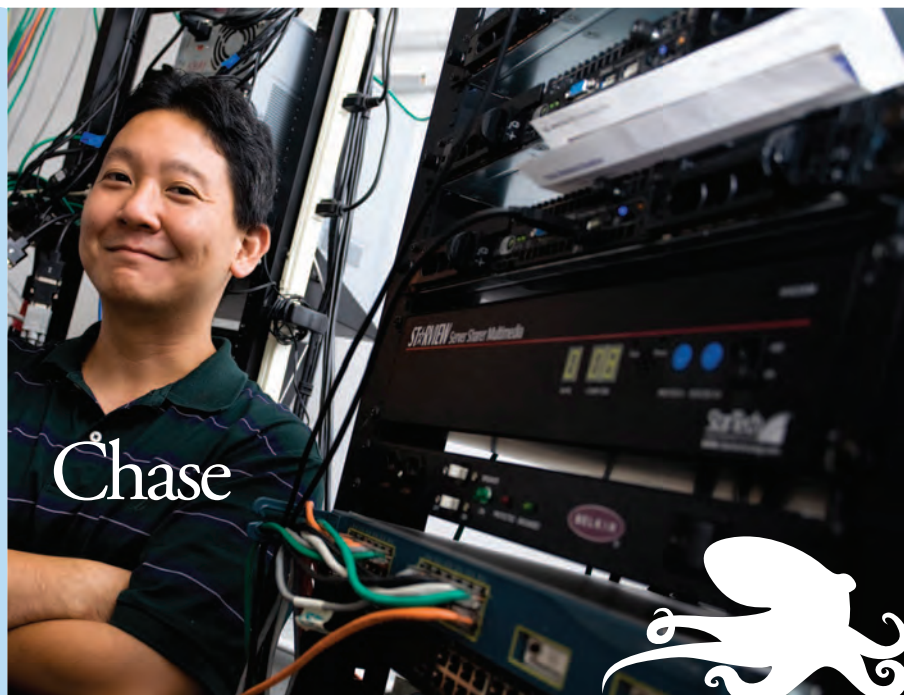
**Roots** I was born and raised in Honolulu. I have three brothers and have fond memories of hiking, biking and boogie boarding all summer long.

**Career background** I have been working for several years as an IT specialist at various departments on the UH-Mānoa campus. The best part of being in IT is that everyone is happy to see you because you're there to try and fix their IT problems.

**Interests** I am enjoying being a husband and father to my 1-year-old son, my 2-year-old daughter and our 6-year-old long-haired daschund. My daughter loves building sandcastles on the beaches of Waikiki and Ala Moana.

**I wanted to join the Waikiki Aquarium team because** my daughter enjoys visiting the Waikiki Aquarium and I thought it would be rewarding to be a part of the team that makes that happen, for my children as well as all the other children who visit every day.

**Favorite Aquarium Resident** The octopus.







# A Day in the Life

Name **Karen Quinn**

Position **Administrative Assistant to Aquarium Director**

Year started at the Aquarium **2007**

Education **Hawai'i Pacific University, BS marine biology (1999)**

Etc. **Cooking is my favorite hobby. I'm most interested in using food as a health management tool. The research required to do this stimulates my scientific mind, while the cooking aspect feeds my creative side. I have fun while ensuring that my body gets the good quality and nutritious food that it needs.**

**7:20 a.m.** I arrive at work for my 7:30 start. The first thing I do is check emails and phone messages and respond to any requests from the U.H. campus and Aquarium staff. I keep a note pad listing what I need to be working on each day; I look over the list and plan out my day. Still, emails or phone messages that have just come in may dictate what the priorities are on a given day.

**8:30 a.m.** I communicate with the front desk staff each morning regarding Dr. Rossiter's schedule. The front desk keeps track of staff comings and goings as well as any visitors who are expected for appointments. At any given time, we have 25 to 30 projects on the go, so organization and communication are essential. I sit down with Dr. Rossiter and go over our pending list so that we are both on the same page with respect to the status of each project and what needs to be done.

**10 a.m.** It's Monday, so I head off to the Department Heads meeting. I attend these meetings to take notes, using an audio recorder to fill in the gaps. These meetings are an opportunity for the Department Heads to share information with each other and the Director.

**11:30 a.m.** Back in my office, I download the audio files from the meeting and again check phone messages and emails. Interruptions are the norm in this position as I help people wanting to make appointments with the Director and follow up on all the other many and varied requests that come in a constant stream.

**noon** I bring my lunch every day and eat at my desk. I do like to get out and walk in the park when I don't get too distracted by other things.

**1 p.m.** We have to renew the protocol to maintain non-mammalian vertebrates. I sit down with Aquarist Eric Curtis to discuss what is needed to complete the paperwork. U.H. requires us to update the protocol on an annual basis. Dr. Rossiter will review the 40-plus page draft protocol, and edit and finalize it before Friday's deadline.

**3:30 p.m.** Dr. Rossiter is out at a meeting, so I take this opportunity to do some filing in his office and to oil the paper shredder. While filing isn't the most glamorous part of my job, it is critical to be able to find documents so we can stay on top of the many projects we have running and the huge amount of paperwork they generate.

**4:15 p.m.** It's time to head home. Before leaving, I update my to-do list and check to see what's happening tomorrow.



“It makes my day when I can resolve problems and get things accomplished. In my opinion, a good employee should be solution-oriented. You should be able to offer your boss ways to resolve a given situation, not just expect them to remedy every crisis.”



# Volunteer SPOTLIGHT

JEAN CARR

**Position** Edge of Reef interpreter & volunteer monitor for special events **Length of Service** 12 years **Background**

I've had a variety of jobs in my career; a highlight was nearly 20 years with the Girl Scout Council. In 1962 I was hired to direct Camp Paumalū on O'ahu. I arrived aboard the Lurline with all my possessions in my car in the hold, never dreaming I'd be here the rest of my life. **Interests** I guess I've always been an outdoor and environmental person. Over the years I have been involved 20 years with Hanauma Bay, and also with the Nature Conservancy and Audubon, plus I've participated in alien algae removal efforts for many years. I was also the volunteer backstage coordinator for the Hawaii Opera Theatre for seven years — which sometimes meant managing more than 100 people for weeks on end.

**I volunteer because** every week is challenging and inspiring and fun. It provides the fuel that keeps my engine running — I'm a Carr, you know! **The first thing I do when I come to the Aquarium** is visit the galleries. It's like walking into a rainbow. Most of the time I don't get much beyond Gallery 1 because I stop to answer visitors' questions. I think the adults are more amazed than young people. **My own marine adventures** have taken me snorkeling throughout the Pacific from Tasmania to Okinawa. Many of those trips were through the Aquarium with Ann Fielding. We visited World Heritage sites at Australia's Lord Howe Island, Midway, the Galapagos and Easter Island. **I'll never forget** snorkeling in the crystal clear water off a magnificent 20-foot coral wall in Bunaken Island, Indonesia. I sighted my first sea snake checking the holes for dinner. Suddenly it started swimming toward the surface and took its gulp of air not two feet from my mask. What a fabulous view of a three-foot black and white banded sea snake!



## MEMBERS ONLY

Our members enjoyed an exclusive evening at the Aquarium on Nov. 14. The event started with the Friends of Waikiki Aquarium annual board meeting. Then guests settled on the lawn with picnic dinners and enjoyed a screening of *Hidden Hawaii*, a National Geographic feature on the Northwestern Hawaiian Islands.

NWHI researcher Dr. Rob Toonen talked about his findings that shine light on the management of marine protected areas, and guests got a sneak peek at the NWHI exhibit under construction and the fishes in quarantine behind the scenes.

Renowned photographer Wayne Levin was also there with an exhibit of his images from the NWHI, plus there were educational materials and activities from the Hawai'i Institute of Marine Biology and the Aquarium Education team.

The sweet ending came from Hokulani Bake Shop with its cakes inspired by the animals of the Northwestern Hawaiian Islands.



Pictured here is Chanda Serrano who won an Apple iPad courtesy of event sponsors Diamond Bakery.



## It's Official

Aquarium Director Dr. Andrew Rossiter and NOAA Office of Marine Sanctuaries Pacific Islands Regional Director Allen Tom officially signed a Memorandum of Agreement establishing a joint participation framework for conservation and education programs about native marine life.

## fishy tales

About 1,500 people joined us on Sept. 18 and dived into the world of reading. It was our first-ever Ocean Literacy Day, Fish Tales: Chronicles, Critters and Crafts. The Aquarium lawn was transformed into an under-the-sea reading wonderland as master storytellers and local celebrities spun their yarns. Keiki were greeted by mermaids and a host of other costumed characters including Kai the Ophi, Sharky from Bess Press, Ronald McDonald and Olina and Kimo from Diamond Bakery.





# CLASSES & ACTIVITIES

January-March 2011

## Afterschool at the Aquarium

Wednesdays 3:00 p.m.

Looking for something to do after school? Every Wednesday, the Aquarium hosts a fun activity on the lawn. You can enjoy Stories by the Sea, or maybe a critter encounter or a creative movement session. The activities last anywhere from 10 to 20 minutes and are designed for ages 4 to 8, but everyone is welcome. Free with admission to the Aquarium.

## Exploring the Reef at Night

Jan 2, Sun 6:00-8:30 p.m.

Jan 18, Tue 6:30-9:00 p.m.

Feb 16, Wed 6:30-9:00 p.m.

Mar 18, Fri 7:00-9:30 p.m.

Join us as we explore the reef at night in an experience you'll not forget. Aquarium staff and participants waded up to their knees on these wet and wild excursions. Test your nocturnal vision as we search for crabs, shrimps, eels and octopus. For adventurers aged 5 and up; youngsters must be accompanied by an adult. \$15/adult, \$9/child (\$18/12 for non-members).

## Photographers' Night

Jan 27, Thu 7:00- 8:30 p.m.

An evening with and for photographers. This program is for amateur photographers to snap pictures without the crowds. Professional photographers will be on hand to offer tips on technique. Attendees can then send in their favorite photos, which may get posted on our website. Recommended for photographers 16 and up. \$8/person (\$10/non-members).

## Humpback Whale Month

February

All of Hawai'i celebrates the humpback whales this month. At the Aquarium, we'll have educational activities provided by NOAA's Hawaiian Islands Humpback Whale National Marine Sanctuary program. Included will be special showings of the award-winning film *In the Wake of Giants*. The short documentary takes you on a Hawai'i research vessel as a small network of well-trained volunteer rescuers risk their lives to save humpback whales that are entangled in marine debris. The film won the BLUE Ocean Film Festival award for the category of National Marine Sanctuary Short.

## Aquarium After Dark

Feb 4, Fri 6:30-8:30 p.m.

Mar 4, Fri 7:00-9:00 p.m.

Mar 17, Thu 7:00-9:00 p.m.

Discover if fish sleep, sea snails snooze or weedy seadragons doze on an after-dark flashlight tour of the Aquarium exhibits. Minimum age 5 years; youngsters must be accompanied by an adult. \$10/adult, \$7/child (\$14/10 for non-members).

# REGISTRATION INFORMATION

- Questions about the activities? Call the Waikīkī Aquarium Education Department at 440-9007.
- Preregistration is required for all activities.
- FOWA members are allowed up to four total registrants at FOWA rate.
- A handling fee of \$5 will be assessed for withdrawals.
- No refunds can be made for no-shows or for withdrawals made seven days or less before an activity.

### To register by phone:

Call 440-9011. Visa and MasterCard are accepted.

### To register by mail:

Full payment must accompany completed registration forms. Please, no cash. Make checks payable to **University of Hawai'i**. Visa and MasterCard are also accepted.

Mail the completed registration form with a check or credit card information to:

**Waikīkī Aquarium Education Department**  
**2777 Kalākaua Avenue**  
**Honolulu, HI 96815**





### Small Fry

Jan 12-Feb 9, Wed

**A Session**

8:30-10:00 a.m.

**B Session**

10:30 a.m.-noon

Apr 6-May 4, Wed

**A Session**

8:30-10:00 a.m.

**B Session**

10:30 a.m.-noon

For the youngest learners. An adult and their 1- to 3-year-old team up to discover the amazing undersea world of the Aquarium. Five weekly sessions include crafts, song, play and exploration of the exhibits. For adult-child teams. \$60/adult & child (\$80 for non-members).

### Oceans Alive!

**Movement: Fins, jets, arms and legs**

Mar 15, Tue

3:00-4:30 p.m.

**Animal Homes: Sand, seaweed, coral & water**

Mar 16, Wed

9:00-10:30 a.m.

Sing, dance, move and groove. Draw, color, create and play. Observe, watch, look and touch. Learn more about the sea during Oceans Alive! Move through stations and enjoy a variety of hands-on activities in the Aquarium's newest class offering. Designed for keiki 2 to 5 years old. \$5/person (\$7 for non-members).

### Northwestern Hawaiian Islands Overnight

Mar 24, Thu (Fri is Kuhio Day)

7:00 p.m.-8:00 a.m.

Enjoy an evening learning about sharks and monk seals and the other key species of the Northwestern Hawaiian Islands. Go behind-the-scenes for a tour of the new exhibit to see how it was created. Learn how the animals are collected and cared for. It takes a lot to keep an aquarium running and participants will get to help by digging for shark teeth! \$30/adult, \$25/child (\$35/30 for non-members).

### Earth Day

April 9, Sat

9:00 a.m.-2 p.m.

Join us as we celebrate Earth Day. More than 20 organizations will be at the Aquarium offering keiki crafts, games and educational materials. Sponsored by the Department of Health's Clean Water Branch and City & County of Honolulu Environmental Services.

### Sea Hunt

April 16, Sat

Join us for Sea Hunt 2011. This favorite Easter event will have all your favorites, including hunts on the lawn, the Easter Bunny, the fishing game, arts, crafts and games. Watch your mailbox for more information.

## ACTIVITY REGISTRATION FORM

Name(s)

Adults \_\_\_\_\_

Phone (home) \_\_\_\_\_

Children/Ages \_\_\_\_\_

Phone (work) \_\_\_\_\_

Address \_\_\_\_\_

City/State/Zip \_\_\_\_\_

email: \_\_\_\_\_

Please register me for:

Activity

Session

Date(s)

Number of Adults/Children

Price

_____	/	_____	_____	_____
_____	/	_____	_____	_____
_____	/	_____	_____	_____
_____	/	_____	_____	_____

Total amount of payment enclosed (check payable to University of Hawai'i): \_\_\_\_\_

If paying by credit card

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☐ Visa

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I am a FOWA Member

☐ Yes

☐ No



# SEASQUIRTS

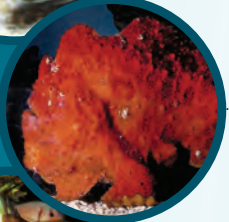
## How do these fishes find their food?

Match the fish to its eating habit!



..... Zebra (a)  
Moray Eel

(1) Scrapes food from rocks with strong front teeth.



..... Frogfish (b)

(2) Spits water at insects to knock them out of trees.



..... Bearded (c)  
Armorhead

(3) Uses whisker-like barbels to find food.



..... Dragon (d)  
Moray Eel

(4) Slurps up small shrimp with a long snout.



..... Archerfish (e)

(5) Uses a lure to attract small fish.



..... Goatfish (f)

(6) Catches slippery fish with its sharp pointed teeth.



..... Seahorse (g)

(7) Crushes prey with flattened teeth.



..... Stripebelly (h)  
Pufferfish

(8) Uses it's whiskers for finding brittlestars to eat.

Come watch these residents of the Waikiki Aquarium eat their lunch!



# NEW & RENEWING FOWA MEMBERS

The Membership Office recorded these new and renewing memberships between Aug. 4 and Nov. 5, 2010.

Ayako Abfalter  
Mrs. Lisa Ackermann  
Jane & Dina Agngarayngay  
Mr. & Mrs. Christopher Aguinaldo  
Mrs. Marlise Ahuna  
Adele & Blair Akiona  
Dr. & Mrs. Bruce S. Anderson  
Sherri Anzai  
Emily Aragon & Stein Metzger  
Mr. & Mrs. Calvin K. Arata  
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James W. Austin III  
Mrs. Pat Axelrod  
Dr. & Mrs. Michael Bagley  
Mr. Curt Balanay  
Mrs. Ruth Barbadillo  
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Mr. & Mrs. J.D. Bayudan  
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Thomas Burke & Marie Wagner  
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Sheila & Volkan Buyukacar  
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Craig Chang  
Raquel Chan-Ikeda & Alvin K. Ikeda  
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C.P. Chee & Karyn Anne Lee  
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Karol Zemier &  
Veronica Campbell-Zemier

If your name is not listed or is listed incorrectly, please accept our apologies for the error and our most sincere thanks for your support.

# MEMBERSHIP WITH A CLICK

We are happy to announce that you can now complete your FOWA membership registration or renewal online when paying with a credit card. We hope this new feature makes your support of the Aquarium even easier. Visit our website at [www.waquarium.org/become-a-member.html](http://www.waquarium.org/become-a-member.html) and click on the "Register online" option.

If you prefer, you can still register or renew your membership via fax or email. On our website you'll find a new form-fillable application that you can fill in and download for this option.

# THE PERKS

Your FOWA membership opens the doors to all the wonderful experiences on offer here, from fascinating classes, to exclusive events, to saltwater supply. We've recently added to the list of benefits that you receive from our partner organizations and will continue to add to the list to enrich your FOWA membership. You can visit [www.waquarium.org/member-special-offers.html](http://www.waquarium.org/member-special-offers.html) for the latest information on offers from our corporate supporters.

# GO BLUE WITH THE KILO I'A

You can help us go blue and reduce printing resources by opting to receive an electronic copy of the *Kilo i'a*. It will still be the same colorful, informative experience ... just kinder on the environment. To choose electronic delivery, call us at 440-9015 or send an email to [membership@waquarium.org](mailto:membership@waquarium.org) and let us know the email address that we should use for delivery.








University of Hawai'i at Mānoa  
Waikiki Aquarium  
2777 Kalākaua Avenue  
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Kilo i'a Issue Number 176  
Winter 2011

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## THE WAIKIKI AQUARIUM'S MISSION:

To inspire and promote understanding, appreciation and conservation of Pacific marine life.

A large black and white photograph of a school of fish swimming over a diver. The fish are silhouetted against a lighter background, creating a dense, dynamic pattern. The diver is visible in the lower left, swimming horizontally.

We are delighted to showcase the work of internationally noted photographer Wayne Levin in this issue of the *Kilo i'a*. Levin, a National Endowment for the Arts honoree, has partnered with the Aquarium and will be displaying his work in the galleries throughout the year. To see more of his art, go to [www.waynelevinimages.com](http://www.waynelevinimages.com). Enjoy!