

CURIODYSSEY news FOR THE CURIOUS



Join the
Citizen
Scientist
Movement

The California red-legged frog, pictured above, is an endangered species. Photo by Justin Miel.

SCIENCE FOR ALL, BY ALL

Citizen science, also known as “crowd science,” “crowd-sourced science,” “civic science,” or “networked science” is scientific research conducted in whole or in part by regular individuals who may not be professionally trained as scientists. You won’t find these people working in a lab, and they may not have any particular background in science. However, they are interested in science and being part of scientific discovery.

Two years ago, CuriOdyssey introduced its own citizen science project focused on amphibian conservation. It established a local chapter of FrogWatch USA, a national program which has been monitoring frogs and toads for more than ten years. Through this program, volunteers across the country collect and report information about local wetlands and frog and toad populations. CuriOdyssey’s chapter is the 50th in the country. According to our program coordinator and

CuriOdyssey’s Director of Wildlife, Nikii Finch-Morales, *“FrogWatch empowers individuals and involves native wildlife; it’s a perfect fit for CuriOdyssey.”*

Frogs and toads are both predators and prey in aquatic and terrestrial food webs. They directly benefit humans by eating insects that can be pests and transmit diseases. Frogs and toads are also sensitive to changes in their environment and are indicators of problems that can affect human health. Many previously abundant populations have experienced dramatic population declines—in the United States and around the world. It is vital that we understand the scope, scale and cause of these declines.

PARTICIPATE IN FROGWATCH

FrogWatch volunteers do not have to be frog or toad experts, but they must have an interest in learning about the amphibians. FrogWatch volunteers are asked to monitor a wetland site for at least three minutes after sunset, multiple

times during the breeding season, and to then report their findings.

CuriOdyssey will be conducting a two hour training in January 2015 for those who are interested in participating in the FrogWatch project. Volunteers will be trained on how to distinguish between the distinct breeding calls of local species; including the northern Pacific tree frog, foothill yellow-legged frog, California red-legged frog, western toad, western spadefoot toad, and the American bullfrog.

More information on the national program and a short video about the project is available online at www.aza.org/frogwatch.

If you would like to volunteer with our FrogWatch chapter and participate in the training program in January 2015, please email CitizenScience@CuriOdyssey.org for further information.



"Lucille" the opossum. Photo by Justin Miel.

The number of opossums at CuriOdyssey has doubled! Earlier this year, we received an opossum named "Lucille," from WildCare in San Rafael.

She was brought to the facility because she was hit by a car. As a result of the accident, she lost the use of her left eye and has little-to-no sense of smell. Because of this, she is unable to survive on her own in the wild.

Lucille is now one of our Animal Ambassadors, or animals utilized in our education programs, used to inform visitors about wildlife.



Science learning is happening at CuriOdyssey!

SCIENCE LITERACY DAY NAMED IN OUR HONOR

In honor of CuriOdyssey's 60th anniversary, and remarkable service to the community, the San Mateo County Board of Supervisors declared October 4, 2014 "CuriOdyssey Science Literacy Day."

Additionally, a resolution was presented to CuriOdyssey's Executive Director, Rachel Meyer, by Senator Jerry Hill's office in honor of CuriOdyssey's 60th anniversary and to recognize Informal Science Day in San Mateo County.

Join our community of science do-ers!



Science Investigation in the field. Photo by Kevin Shoban.



Weekend Workshops empower kids to build with real tools

This winter, your child can join CuriOdyssey's community of science do-ers! From day-long camps to weekend workshops, there's a science activity for every science enthusiast.

Winter Camp (grades 1st-3rd)

- **CuriOdyssey Science Investigators (CSI)**

First through third graders will practice CSI science by gathering facts, analyzing data and drawing conclusions in order to solve a mystery.

Day: December 22, 2014

- **Intrepid Investigators**

Campers in grades first through third will discover how science plays a role in building a rope ladder with tree branches and other fun activities.

Day: December 23, 2014



Weekend Workshops Ice Activity. Photo by Sanders Fabares.



Winter Light Activity

Science Explorers (ages 3-4)

Preschoolers are natural scientists! Help them utilize their natural skills of inquiry in sessions that feature a different scientific theme and ignite their curiosity.

Day/time: Fridays, 8:30am-12pm, various dates

Weekend Workshops (ages 6-11)

Does your child enjoy exploring, creating and discovering? Weekend Workshops help kids take a deeper look at some of the phenomena around them.

Day/time: Saturdays, 10:15am-12pm, various dates

Winter Break Science Workshops (K - 2nd grade)

These half-day workshops are great for kids who want to get more than a taste of science but don't have a whole day of their winter break to spare.

Day/time: Wind Power: Monday, December 29 & Animal Enrichment: Tuesday, December 30

For program registration, fees, and more information, please visit our website: www.curiodyssey.org/activities/classes-workshops

Members-only Science Night



Photo by Graham Paterson

Friday, December 5, 2014
6pm-8pm

Join us for this annual family event to make eco-friendly gift wrap using surprising materials, try out some hands-on science activities, purchase unique gifts from The CuriOdyssey Shop and enjoy hot chocolate and cookies. This event is free to our CuriOdyssey members. Come and kick off your holiday season with us!

A Long Journey: The Flight of the Monarch Butterfly

Each fall, millions of monarchs travel from the Rocky Mountains to the California Coast for warmer weather, breeding and better food, but it can take up to four generations of them to return to their summer feeding grounds in the Rockies. Using electromagnetic sensors in their antennae to navigate milkweed patches along the way, they lay their eggs and die as the next generation carries on to balmy weather.

Monarchs have very specific requirements in their migration. Feeding only on milkweed plants as caterpillars, and on non-milkweed nectar as butterflies, they require a diverse, specialized microhabitat. Additionally, their sheer numbers make them easy prey, and they require extensive cover for protection from birds and other predators.

From late fall to early spring, the many tall trees at Coyote Point Park provide a good resting spot for the black and orange visitors. Sadly, habitat loss due to our increased development of critical natural areas is forcing the butterflies to fly further to find good breeding ground. Additionally, pesticides built into our genetically modified crops are being dispersed with the plants' pollen, poisoning monarchs and other insects.

So what can you do to help? To provide habitat for these butterflies, make sure to plant native milkweed in your garden. Be careful not to plant the tropical milkweed that is most commonly found in nurseries and garden centers. Recent research that suggests that tropical milkweed may actually disrupt the natural breeding behaviors of the monarch butterflies. For this reason, native milkweed is most conducive to the butterflies' natural migration. For those who are interested in providing viable habitat for these creatures, native plant societies can be helpful in offering advice on what types of milkweed are native to a specific location.

- Contribution from Eliza Lubetkin, Science Educator

PUBLIC ART INSTALLATIONS



"Zephyr," one of CuriOdyssey's two public art pieces. Photo by Rik Myslewski.

This fall, CuriOdyssey introduced its first ever foray into public art by installing two art pieces on the outside of its building. Both pieces make the invisible visible by highlighting the chaotic wind currents and eddies of air that move through Coyote Point Park.

These installations are on display for observation to all who pass through the area.



"Visible Air" hangs from the eucalyptus trees, facing the Bay. Photo by Rik Myslewski.

GIVE THE GIFT OF WONDER!

This holiday season, consider giving an experience that will last the entire year - a membership to CuriOdyssey! It's a gift that will bring joy to families all year long with science fun and up-close experiences with animals.

Visit www.CuriOdyssey.org/membership to purchase a gift of membership.

Experiment with Science at Home!

ACTIVITY: BOUNCING POLYMER BALL



This recipe makes the non-sticky sort of 'rubber' or gelatinous slime that is known as "flubber."

Time required: 15 minutes

Grade level: kindergarten or older (with help from a grown-up)

You'll need:

- 1 tsp Metamucil or similar soluble fiber
- 8 oz water
- microwave-safe bowl

What to do:

1. Mix 1 teaspoon of Metamucil with 1 cup (8 ounces) of water in a microwaveable bowl. You can add a drop or two of food coloring if you wish.
2. Place bowl in the microwave and nuke on high for 4-5 minutes (actual time depends on microwave power) or until the goo is about to bubble out of the bowl. Turn off the microwave.
3. Let the mixture cool slightly, then repeat previous step (microwave until about to overflow). The more times this step is repeated the more rubbery the substance will become.
4. After 5-6 microwave runs, pour the flubber carefully onto a plate or cookie sheet.
5. Allow to cool.
6. Flubber can be stored at room temperature in a sealed baggie for several months. It will last indefinitely in a sealed bag in the refrigerator.



Grade level: kindergarten and older (with help from a grown-up)

You'll need:

- borax
- cornstarch
- white glue, blue or clear school glue
- warm water
- food coloring (optional)
- measuring spoons
- spoon or craft stick for stirring
- two small cups for mixing
- marking pen
- timer
- sealable baggie

What to do:

1. Label one cup "Borax Mix" and the other cup "Ball."



2. Pour two tablespoons of warm water and a half of a teaspoon of borax powder into the cup labeled "Borax Mix."
3. Stir the mixture to completely dissolve the borax.
4. Add food coloring to color the solution.
5. Pour one tablespoon of glue into the cup labeled "Ball" Add 1/2 teaspoon of the borax solution you just made and 1 tablespoon of cornstarch. Do not stir.
6. Allow the ingredients to interact on their own for 10-15 seconds and then stir them together to fully mix. Once the mixture becomes impossible to stir, take it out of the cup and start molding the ball with your hands.
7. The ball will start out sticky, but it will solidify as you knead it more.
8. Once the ball becomes less sticky, bounce it!
9. You can store your plastic ball in a sealed bag when you are finished playing with it.
10. Once you are finished, make sure that you thoroughly clean your hands of the mixture.

Questions to consider:

- What happens if you make a few differently sized balls? Does the size of the ball affect how the balls bounce?
- What happens if you experiment with the ratio of glue, cornstarch and borax? Does more or less cornstarch affect the way the mixture bends or how it is molded? What happens if you add more glue or more borax? What about when you use less?

Innovators Circle Contributors

The Board of Trustees and staff of CuriOdyssey wish to express our sincere appreciation to the following individuals and organizations for their generous support between July 1, 2014 and September 30, 2014.

Every effort has been made to be accurate. If your name is not present or you are not recognized properly, please contact Tavi Haberman, Development Associate, at 650.340.7573.

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Tribute Gifts

Thank you to the following donors for tribute gifts between April 1, 2014 and June 30, 2014.

In honor of:

Judy Barton: Mr. and Mrs. James H. Greene, Jr. *Christina Carey:* Douglas Berl *Ted Taylor:* Mr. and Mrs. Charles Callaghan

In memory of:

Leslie Bonner: Mr. and Mrs. Henri Haber *Joey Kovacevich:* Mrs. Judith Webster Barton *Mary Lee Stoddard:* Mr. and Mrs. Henri Haber

CuriOdyssey Gala a Huge Success!



On Saturday, September 20, 2014, CuriOdyssey held its 5th annual fundraising event, the CuriOdyssey Gala, this year themed "Lift Off" in celebration of CuriOdyssey's 60th anniversary. More than 350 guests enjoyed an out-of-this-world event at the home of Alexia and Ted Kruttschnitt, the Villa de Verano in Hillsborough.

This year's CuriOdyssey Gala successfully raised nearly \$200,000 in net revenue for CuriOdyssey's brain-building science and wildlife center! Guests showed unprecedented support for our low-income outreach programs for our Fund-A-Need, exceeding our goal and raising \$104,000 to bring hands-on science education to the underserved in our community.

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Events (Dec-Feb)

MEMBERS-ONLY

Members-only Science Night
Friday, December 5
6pm-8pm

Make eco-friendly gift wrap, get hands-on with unique science activities, enjoy hot chocolate, cookies and a festival holiday atmosphere.

WINTER PROGRAMS

Winter Camp
December 22 & 23, 2014
Grades 1st - 3rd

Love Camp CuriOdyssey in the summer? Get your wintertime fix! Enroll in one day of camp or two. www.CuriOdyssey.org/activities/winter-camp/

Winter Break Science Workshops
Wind Power
Monday, December 29
9am-12pm
Design an efficient wind turbine, build a wind-powered car, and look at how wind helps or hinders flight!

CuriOdyssey Animal Enrichment
Tuesday, December 30
9am-12pm
Make an enrichment package, get up-close with a live animal, and observe how our animals interact with your creation.

Winter Break Explorer Days
Friday, December 26 & January 2
10am-3pm
Come and explore the science of the world around you in an interactive drop-in program. New activities each day.

Weekend Workshops
2nd and 4th Saturdays
10:15am-12:15pm

Inventive Engineering
December 13, 2014

Marble Runs: Part 1
January 10, 2015

Marble Runs: Part 2
January 24, 2015

Sticky, Slimy, and Sweet Science
February 14, 2015

SUMMER CAMP REGISTRATION

Save the date!
Begins February, 2015

Join Camp CuriOdyssey to create a catapult, encounter live animals, explore the outdoors, and investigate ice.

ON-GOING PUBLIC PROGRAMS

Animals In Action
Tues-Sun, 11:00am

Otter Feeding
Tues-Sun, 12:00pm

Bobcat Feeding
Tues-Sun, 1:00pm

Animal Connections
Wildlife Show
Sat-Sun, 1:30pm and 2:30pm