San Diego Citizen Science Day Expo 2016

Event Program

10am-2pm, April 16, 2016

At the La Jolla / Riford Library

7555 Draper Ave, La Jolla, CA 92037
Tel: 858-552-1657

San Diego Citizen Science Day Expo Program

Community Room (10:00am - 2:00pm): Locally active Citizen Science Project Exhibits

Do you enjoy nature? Hiking? Strolling on the beach? Surfing the web? There's a citizen science project that will fit your needs! Enjoy your favorite activities while contributing to locally active citizen science projects. Enjoy learning? Science? Learn more about informational sessions, online tutorials, seminars, guided walks hosted by local citizen science projects. Local projects with exhibitions and representatives on hand to answer your questions include:

*Mark2Cure

*Urban Tides Initiative

*I Love a Clean San Diego

*Cabrillo National Monument

*Ocean Sanctuaries

*Ocean Sampling Day

*Calflora

*San Diego Wetlab group

*San Diego Tracking Team

*California Dept of Fish and Wildlife

*San Dieguito River Valley Conservancy

*California Roadkill Observation System

*SD Barcode of Life

*SD Mycological Society

*Anza-Borrego Foundation

*San Diego Audubon

Other groups with exhibition material available, but will be away in the field include:
*San Diego Natural History Museum
*San Diego River Foundation

Upstairs Lecture room: Citizen Science Seminars

Time slot	Project/Group	Speaker
10:00 - 10:30	Mark2Cure	Ginger Tsueng
10:30 - 11:00	SD Barcode for life	Mary Ann Hawke
11:00 - 11:30	San Dieguito River Conservancy	Shelley Glenn Lee
11:30 - 12:00	Discussion/Citizen Science Social	Panel
12:00 - 12:30	Urban Tides	Astrid Hsu
12:30 - 1:00	Ocean Sanctuaries	Barbara Lloyd
1:00 - 1:30	SUP Science technology	Shannon Waters
1:30 - 2:00	Panel Discussion	Panel

Computer Lab: Scheduled Citizen Science Day Workshops

Time slot	Activity	Host
10:00 am - 11:00 am	Tour of Virtual Citizen Science opportunities	Jake Bruggemann
12:00 pm - 1:00 pm	Wikipedia for Science Introduction and Edit-a-thon	Ginger Tsueng

*Note that computer lab workshops may require advanced registration to participate. Registration is free, but space is limited. Registration details will be available on the library's site.

About the Exhibitors:

Mark2Cure

There are over 25 million articles indexed in Pubmed, and roughly one article published every THIRTY seconds, biomedical literature represents an exciting and challenging big data issue. Coupled with the fact that most articles contain a lot of important but unstructured information, and that natural language processing is a challenging computational problem; Mark2Cure is a citizen science and volunteer-based approach to dealing with this issue.

Anyone who can READ can use Mark2Cure's website to help organize information embedded in biomedical literature so that researchers can find clues faster. Our current campaign targets NGLY1-deficiency, an ultra rare disease affecting children.

Mark2Cure is a project of Andrew Su's lab at the Scripps Research Institute.
If you can read, you can help. Start now at http://mark2cure.org

San Diego Wet Lab Group

The Wet Lab is the only DIYBio Citizen Science facility in San Diego. We are a community of professional and citizen scientists who share a common interest in biology. Our mission is to educate people young and old about the stunning world of biology, making cutting edge biotechnology accessible to everyone from all walks of life. Through our collaborative efforts, knowledge sharing, and broad participation, we intend to develop open source protocols with our global community.

Urban Tides

This season, climate change and El Niño are taking the world by storm—at least in Southern California. These factors exacerbate sea level rise, heavily battering the shores through runoff and wave action. The result? Flooding, erosion, and damage to infrastructure.

To help keep tabs on these natural hazards, researchers from Scripps Institution of Oceanography at UC San Diego, Southern California Coastal Ocean Observing System (SCCOOS), and US Geological Survey create models to identify regions most at-risk of flooding and erosion. By teaming up with USC Sea Grant, the Urban Tides Community Science Initiative, a citizen science program, was born. How it works is simple: anytime you are at the beach, you can snap a picture and upload it into the database using a smart phone app or your computer. Researchers can then use these photos to check and improve their models, helping city planners and communities better prepare for the impacts of future sea level rise and storm events. To further engage the community, beach walks are held to teach citizen scientists the in-depth science behind pictures, train them in app use, and bring together scientists and stakeholders.

Cabrillo National Monument Bioblitz

Join us for an NPS Centennial celebration as we bioblitz with dozens of other parks in May! Cabrillo National Monument has the honor of being one of the showcase parks, with a live feed of our activities broadcast to the National Mall in Washington, D.C.!

We're excited to show off our amazing biodiversity here and hope you can be a part of the fun! Join us on iNaturalist: http://www.inaturalist.org/people/cabrillonationalmonument

In addition to the blitz, we already have several guest speakers lined up from US Fish and Wildlife Service, US Geological Survey, UC San Diego, San Diego Natural History Museum, and San Diego State University covering topics such as rattlesnakes, peregrine falcons, bees, butterflies, and more!

When: May 21st, 9am-8pm (special extended park hours!)

Where: Cabrillo National Monument, 1800 Cabrillo Memorial Drive, San Diego, CA 92106

For more information, please visit: http://www.cabrilloevents.org/bioblitz2016/

San Diego Tracking Team (SDTT)

The San Diego Tracking Team (SDTT), a California non-profit organization founded in 2003, promotes the preservation of critical wildlife habitat in the San Diego region. SDTT organizes and trains volunteers to conduct wildlife surveys. The data are used by regional planners to support wildlife corridors and other key habitat areas that are crucial to the survival of our native animals.

Volunteers can participate on wildlife surveys after a free half-day training session. They join a team of citizen scientists looking for tracks, scat, and other signs from some two dozen species. Experienced survey team leaders follow a strict data collection protocol and ensure a high confidence in identifications. SDTT teams monitor about three dozen transects (one-kilometer trail segments) throughout the San Diego region four times a year. Survey results are maintained in a historical database; they are also available on the California Department of Fish and Wildlife Biogeographic Information & Observation System (BIOS). In addition to generating important scientifically-valid data, volunteers enjoy spending time in nature and developing their wildlife tracking skills.

Ocean Sanctuaries' Marine Citizen Science Projects

Ocean Sanctuaries was formed in 2014 as an ocean-related non-profit group to create and support marine citizen science projects primarily for residents of San Diego, but has now expanded to countries abroad.

We have two shark citizen science projects and one involving a local artificial reef: the Yukon, off Mission Beach.

1. A partnership with National Geographic's Citizen Science tool called 'Fieldscope' which allows local divers to document encounters with local non-sevengill sharks, called 'Sharks of California'
2. The Sevengill Shark ID Project, which began locally in 2010, but has now expanded to partner with the Two Oceans Aquarium in South Africa, allows divers to submit photographs of Sevengill sharks (Notorynchus cepedianus) to a pattern recognition algorithm contained in Wildbook, an open source software program used for mark-recapture, molecular ecology, and social ecology studies, especially where citizen science data needs to be incorporated and managed. The freckling patterns in this species are analysed to determine which individuals may be returning from year-to-year in certain pre-identified locations.
3. The Yukon Marine Life Project, which began locally here in San Diego in 2000, with the sinking of the Canadian warship Yukon, to act as an artificial reef. Local divers can submit marine life photos taken while diving the Yukon, as part of a follow-up study being done by Ocean Sanctuaries.

San Diego Barcode of Life

In 2003, Canadian scientist Paul Hebert proposed “DNA Barcoding” as a novel way to identify species. Unlike sequencing the entire genome, barcoding only uses a very short genetic sequence from a standard part of the genome, similar to the way a supermarket scanner distinguishes products using the black stripes of the Universal Product Code (UPC). Two items may look very similar to the untrained eye, but their barcodes are distinct and can positively identify what they are.

Historically, biological specimens were visually identified by features like the shape, size and color of body parts, often by experienced professional taxonomists using complicated step-by-step “keys”. But sometimes even specialists are unable to make identifications, especially if the specimen is old, incomplete, or is something completely new to science. Barcoding solves these problems because with recent advances in technology, even non-specialists (students, citizen scientists, or parataxonomists) can obtain barcodes from tiny amounts of tissue (even from archived museum specimens).

SD-BOL is part of the International Barcode of Life (iBOL) - the largest biodiversity genomics initiative ever undertaken. Hundreds of biodiversity scientists, genomics specialists, technologists and citizen scientists from 25 nations are working together to construct a DNA barcode reference library that will be the foundation for a DNA-based identification system for all multi-cellular life. Locally, SD-BOL has begun working with businesses, schools, libraries, and nonprofits to spool-up citizen science projects that will help scientifically document the rich biodiversity of our region. The knowledge gained can help us make informed decisions about conserving the diversity of life for future generations.

California Roadkill Observation System (CROS)

The California Roadkill Observation System is a web system used to record observations from citizen scientists who come across identifiable road-killed wildlife.

This includes type of animal and/or species is found, where the road-kill was located, when it was found, how long it might have been dead, pictures of the road-kill, and any additional details about road or traffic conditions. The system then displays a summary of this information for different animal groups across the state. It is run by the UC Davis Road Ecology Center and is used for gathering information about where wildlife vehicle collisions occur, what animals are involved, on what kinds of roads are collisions frequent, and other data can help inform policy, management, and financial investment in reducing road-kill. The collected data is provided to collaborators on the site and used to improve collective understanding of how road-kills occur and what we can do to reduce them.

Mycological Society

Formed in 1997, the SDMS began as a fun way for local mushroom enthusiasts to get together, and grew into a non-profit that educates and disseminates scientific information about mushrooms to the community.

Monthly meetings feature scientists and special guests with expertise in all areas of mycology, from cooking/growing to photography, and from arts/crafts to gardening and conservation biology. Together, members go on forays throughout San Diego county to learn about and collect mushrooms. Each February, SDMS hosts a day-long “Fungus Fair” event in Balboa Park, to introduce the public to all the amazing aspects of Kingdom Fungi.

In the past few years, SDMS members have initiated a local citizen science project that has been building up the collection of scientific mushroom specimens and data at the SD Herbarium in the Natural History Museum (theNAT). This project now features a new dimension - the collection of tissue samples to be analyzed by the exciting new science of DNA barcoding. Visit www.sdmyco.org to learn more about the SDMS and this innovative citizen science project in San Diego County!

San Dieguito River Valley Conservancy

The San Dieguito River Valley Conservancy is a 501(c)(3) non-profit conservancy dedicated to sustainable management of the natural resources of the San Dieguito Watershed with priority given to the protection of the San Dieguito River corridor. Thanks to grants, awards, funding, and support from various organizations the San Dieguito River Valley conservancy is able to train and encourage volunteer citizen scientists to collect field data on plants and animals within lands owned by the Conservancy and the San Dieguito River Park, and successfully engage the community.

The results will be scientifically robust, will complement current research in the park, and will be shared with our conservation partners throughout the region. Citizen science takes advantage of the fact that visitors to the River Park are constantly observing their surroundings as they hike, bike or ride their horse on our trails. This program offers residents, volunteers, trail users and other outdoor enthusiasts a way to actively contribute to the betterment of their local outdoor spaces; they can be a field scientist for a day. It also offers students, when combined with school and university programs, a great way to get hands-on learning opportunities.

California Department of Fish and Wildlife: Aquatic Invasive Species Program

The California Department of Fish and Wildlife has a number of citizen science programs, including one for monitoring invasive species. Through their Aquatic Invasive Species Program, CDFW aims to:

•Preventing the spread of aquatic invasive species
•Conducting research on aquatic invasive species
•Assist lakes with grant applications to prevent the spread of aquatic invasive species
•Plant and promote drought resistant and native plant species
•Participate in outreach events to spread awareness on aquatic invasive species
•Discourage the feeding and relocating of wildlife
•Discourage the releasing of pets into the wild

Learn more about invasive species, their impact in your community and our state, and how you can help.

Calflora

Calflora is 1. a website you can use to learn about plants that grow wild in California (both native plants and weeds); and 2. a nonprofit organization responsible for providing this service. Information in Calflora comes from many sources: public agencies, non-profits, scientists, private donors, and you!

Calflora serves a large and increasing number of users, including researchers, scientists, students, environmental consultants, landscapers, and amateur enthusiasts.

Calflora offers resources for an informed, timely approach to biodiversity protection. Through Calflora, scientists, citizens, and policymakers have quick and easy access to data they need for analyzing species distributions, modeling spread of invasive species, or identifying consequences of habitat loss. Furthermore, Calflora provides a mechanism for citizens to participate directly in building the information resources they need, and gives all users an opportunity to learn about the beauty and diversity of California plant life.

Ocean Sampling Day

Ocean Sampling Day (OSD) is a simultaneous sampling campaign of the world's oceans which took place (for the first time) on the summer solstice (June 21 st) in the year 2014 and was repeated in 2015. Scientists from the National Oceanic and Atmospheric Administration (NOAA) and the Scripps Institution of Oceanography hosted the event locally in the last two years. OSD was funded as part of the Micro B3 project in Europe. Funding is not currently available in 2016 to US sampling sites but sampling will continue thanks to voluntary efforts of US scientists, with organizational efforts happening now.

I Love A Clean San Diego

Founded as the San Diego War Against Litter Committee in 1954, I Love A Clean San Diego celebrates six decades of promoting environmental education and awareness in San Diego County. In the 1970s "I Love A Clean San Diego" was the slogan for the organization's anti-litter campaign and in 1980 it became the organization's name. In 1989, ILACSD merged with the San Diego Ecology Center, joining two leading environmental organizations together to better serve the community, under one name.

ILCAS continues to empower everyone to improve the health and beauty of our local environment through their educational, volunteer, and citizen science programs for monitoring and mitigating pollution.

Anza-Borrego Foundation

Anza-Borrego Foundation (ABF) is the official nonprofit partner of Anza-Borrego Desert State Park. We acquire land for conservation in and around the Park, educate the public about the Park's resources and support research relevant to our region. ABF supports citizen science programs like the Park's annual Bighorn Sheep Count, springtime HawkWatch, Christmas Bird Count and the Anza-Borrego Tracking Team. Find out more about these projects and how you can get involved in the science and research that are taking place in Anza-Borrego.

San Diego Audubon Society

San Diego Audubon is a chapter of the National Audubon Society, an organization founded in 1905 to stop the slaughter of wild birds for their feathers. Since 1917, San Diego Audubon members have been dedicated to protecting and appreciating our local wildlife and their habitats. San Diego Audubon leads the way in fostering knowledge and appreciation of the natural world and seeks to become an even more significant resource for our communities through our education, environmental recreation, and numerous conservation programs.

In addition to being engaged in the longest-running Citizen Science project (the Audubon Christmas Bird count) our office is open each weekday to answer questions and help you connect with the programs you are most interested in. Each year, hundreds of students receive natural history lessons through our OutdoorExplore! Program, and many volunteer at our habitat restoration work parties.

About the Speakers:

Ginger Tsueng is the scientific outreach project manager for the Su Lab at the Scripps Research Institute and the primary contact for citizen scientists and volunteers for Mark2Cure.org. She is interested in citizen science and open access issues and serves as the proposal editor for the Gene Wiki Review Series, an invited review series from *GENE* that incentivizes gene/protein experts to contribute to gene/protein articles in Wikipedia. With help from Shaun Briley at the La Jolla Public Library, she organized the San Diego Citizen Science Day Expo.

Mary Ann Hawke is a scientist and educator who dove headfirst into citizen science by running the San Diego County Plant Atlas at the SD Natural History Museum. That led to a follow-up project, barcoding plant specimens generated by the Plant Atlas. Her interest in mycology began with her Ph.D. project in a plant pathology lab at Agriculture Canada. These interests recently merged when she joined with the SD Barcode of Life, and started a new citizen science project to collect mushroom specimens in the county, deposit them in the SD Herbarium, and have them barcoded as part of iBOL – the largest biodiversity genomics initiative ever undertaken.

Shelley Glenn Lee is an Elementary Science Teacher at High Tech Elementary North County with over 20 years of experience as a science educator in both formal and informal educational settings. With her background in Biology, Shelley works to connect students with the local scientific community and the amazing natural diversity of San Diego through Project Based Learning and Citizen Science. This is her fifth year with HTH. She is currently a Teacher Leader for the California NGSS Early Implementers Initiative with K-12 Alliance, and she is Co-Founder of the San Diego Citizen Science Network.

Astrid Hsu is a current Master student at Scripps Institute of Oceanography studying Marine Biodiversity and Conservation. She is interested in the cross-section of marine science and education/communications, and is currently working with Birch aquarium to look at the potential role of books in aquariums. Astrid recently became involved in citizen science to gain experience working in informal education settings as well as to understand and evaluate the benefits of citizen science programs.

Barbara Lloyd is the founder, president, and CEO of Ocean Sanctuaries, an ocean-related related nonprofit organization (NPO) that would be focused mainly on gathering and sharing data from various citizen science projects, as well as documentary filmmaking. She has been a volunteer research diver since 2002, working with a variety of groups such as San Diego Coastkeeper/BayKeeper, Yukon Artificial Reef Monitoring Project, Reef Environmental Education Foundation, Reef Check California. She joined California Science Center in 2010 and has continued to training to become an American Academy of Underwater Scientists (AAUS) Science Diver.

Shannon Waters is a graduate student at Scripps Institute of Oceanography who has been involved in education and environmental groups since 2006. She has been an education coordinator for I Love a Clean San Diego, and a volunteer programs coordinator for the California Coastal Commission. She seeks to meaningfully contribute to the advancement of ocean literacy for people of all ages using experiential engagement via volunteer or citizen science projects.

About the Workshops:

Tour of Virtual Citizen Science Opportunities

Thanks to the amazing improvements in telecommunications and computational technologies, many exciting opportunities for citizen science are now available completely online! Join Jake Bruggemann (the Scripps Research Institute graduate student and pioneer behind the Microscopy Masters project hosted by the Zooniverse) on a guided tour of some exciting virtual citizen science projects you can do from the comfort of your own home.

Wikipedia for Science: Introduction and Edit-a-thon

Wikipedia is one of the largest, most accessible sources of information online. It has thousands of well-referenced scientific entries which make it a popular first stop for learning about a subject. Where do these articles come from and who edits them? Take a hands-on crash course for editing scientific wikipedia entries and learn why adding scientific content to Wikipedia is an important and valuable volunteer-led contribution to science. Then practice what you've learned by helping to improve existing scientific entries or even creating new ones!