Within a week of the shutdown we launched Stuck at Home Science, a new online series of hands-on activities designed to keep elementary students and families engaged in science education using easy-to-find household supplies. In early May we debuted Science Beyond the Center, another new online learning portal that...
provides behind-the-scenes access to the Science Center’s exhibits and living collections while our doors are closed, with fresh content added three times a week.

By June we successfully adapted our popular Hands-On Science Camp to a virtual platform including online instruction and materials for science activities shipped to campers’ homes, with scholarships provided to families with financial need – including those recently impacted financially by COVID-19 – amounting to nearly half of the 2,200+ camp enrollment participating free-of-charge. We also developed an offline “Camp in a Box” version of Science Camp and worked with community partners to serve children and families with limited or no access to devices or Internet connectivity.

Jeffrey N. Rudolph, President, California Science Center Foundation

Virtual Hands-On Science Camp lessons are now being repurposed for our Community Youth Programs, which our education staff and teen interns are delivering to middle school students in partnership with community organizations including Heart of Los Angeles and Para Los Niños. We are also conducting Educator Professional Development virtually and continuing to evolve other programs, including piloting Virtual Field Trips for a January 2021 launch.

We are so proud of the creativity and commitment of our team in finding innovative ways to provide our communities with impactful science learning resources during this unprecedented closure. Beyond a response to the challenges of the pandemic, we are approaching our program development strategically and will continue to offer virtual experiences alongside in-person programs going forward to expand science learning opportunities to new audiences beyond our original capacity.

Read on to learn more about two new exhibitions in development for an anticipated Spring 2021 opening at the California Science Center (hopefully we’ll be permitted to reopen by then!) and an update on one of our special exhibitions currently traveling the country.

Wishing you a wonderful Thanksgiving and holiday season!
When they enter the exhibition through the patio, the Fire Triangle interactive invites guests to explore the science behind fire. The setting is a fire pit with three touch screen interactive stations. Behind each is a circular fire container surrounded by lava.

By David Bibas, PhD, Curator of Technology Programs

Seldom do we have the opportunity to develop exhibitions that could potentially save lives. But Fire! Science & Safety is such an exhibition, currently under development by the California Science Center. The exhibition’s main goal is to help visitors explore the science of fire, understand the risks of fire and burns throughout the home, learn how to prevent fires, and, as importantly, how to respond if a fire ignites.

The educational approach of the exhibition is inquiry-based learning, which compared to other approaches has been found to be most effective in holding people’s attention and successfully communicating important messages to them. The exhibition is set in a “typical” Los Angeles dwelling, with a twist—it is presented as a “training site” for budding fire danger detectives! Visitors will explore the immersive environment on their own terms, encountering surprises, discovering vital information about fire prevention and preparation, and practicing behaviors that can help them avoid fire dangers and minimize harm. The exhibition aims to not only capture our visitors’ attention and raise their awareness of fire and burn dangers at home, but also engage them in a way that will positively impact their future behaviors to make them safer.

The home has two “outdoor” spaces—a patio and a deck—and five interior rooms: a living room, kitchen, bedroom, bathroom and utility room. As visitors explore these spaces, they will discover over 20 interactive experiences, each representing a potential fire and/or burn hazard. In each case the idea is for the guest to identify the hazard, learn how to avert a fire, and find out what to do if one starts.

When they enter the exhibition through the patio, the Fire Triangle interactive invites guests to explore the science behind fire. The setting is a fire pit with three touch screen interactive stations. Behind each is a circular fire container surrounded by lava.
rock. On the screen guests are introduced to the concept for the fire triangle, with each side of the triangle representing one of fire’s necessary elements—fuel, oxygen, and heat. By selecting from an array of fuel options, sources of heat, and adding oxygen, a virtual fire flares up in the adjacent fire pit. Once one of these elements is removed, the virtual fire goes out.

In the kitchen, guests can interact with many common appliances, like a cooktop range, a stove, a microwave oven, and a toaster, to learn about the fire hazards of each and how to prevent them.

One of the highlights of the exhibit is a Fire Extinguisher interactive in the utility room. The exhibit invites visitors into the scenario imagining that a fire has started because of a dryer malfunction. The goal is to make people aware that in such circumstances they need to quickly assess the situation and decide if it’s worth fighting the fire or better to escape. If they choose to fight the fire, they’re given 60 seconds to do it. To put out the fire, they need to point a fire extinguisher nozzle at the fire and squeeze the lever to project a virtual retardant at the fire. If the retardant is sprayed correctly, the fire and smoke subside. If not, the guest is asked to promptly leave the area to “save” themselves.

A section of the exhibition addresses the increasingly important issue of wildfires in California, which, due to a host of factors, have become more frequent and more devastating. Wildfires are a risk to residential areas in the wildland-urban interface. It’s critical for people living in these areas to take a variety of preventive measures to make their communities more resilient and also be prepared for immediate evacuation, if necessary.

Finally, in addition to the exhibit experiences, educational programming including interactive demonstrations and activities will be delivered to students on field trips throughout the week and to general audiences on weekends to augment and reinforce the messages of the exhibition. Guests will participate in a “home on fire scenario,” discuss how best to prevent fires and burns at home, the importance of having an escape plan, and practice the “stop, drop, cover your face and roll” technique.

*Fire! Science & Safety* is a collaboration of the California Science Center and the Children’s Burn Foundation which has provided generous funding for the exhibition. It is scheduled to be ready to open in Spring 2021 in the Creative World gallery.
As guests move deeper into the exhibition, they encounter a large, organic wooden structure—the womb room. Stepping inside, guests are immersed in an ambient, womb-like space. Real human prenatal specimens show the early stages of human...
development, as limbs and other anatomical features take shape. A beautifully rendered video tells the story of human development from the meeting of sperm and egg through the moments just before delivery.

Emerging from the womb room, guests are greeted by a joyful and poignant series of videos showing different creatures being born. Other exhibits in this area explore how living things grow up and become capable of having babies of their own. Interactive tilt table games compare and contrast the parenting strategies of two creatures: an elephant that invests great care into raising a small number of offspring and a frog that lays hundreds of eggs and leaves survival of its offspring to chance! A display of live caterpillars, pupae and moths showcases the amazing transformation that some creatures go through to reach adulthood.

From a biological perspective, reproduction is ultimately about passing on genes to the next generation. Guests will find a collection of three genetics exhibits at the center of the exhibition space. To explore how genes and traits are passed from parents and offspring, guests will be able to mix and match traits from two parent pigeons to create unique combinations of traits in a baby pigeon. Other exhibits explore the ways that our human genes interact with our environments to make us who we are.

Development of this exhibition has been made possible by the generous support of an anonymous funder. It is scheduled to be ready to open in Spring 2021 in the World of Life as a precursor to the larger gallery renovation.
By Chuck Kopczak, PhD, Curator of Life Sciences

*Dogs! A Science Tail*, a traveling exhibit created and developed by the California Science Center with support from the Annenberg Foundation and Wallis Annenberg PetSpace, exceeded attendance projections during its premiere opening from March through December 2019. Guests explored the unique ability of humans and dogs to communicate across species lines through fun, memorable experiences focused on the evolution of the domestic dog, the bond between humans and dogs, the amazing abilities of dogs, and our responsibility to our dogs. The experiences associated with these different facets of the relationship between dogs and humans provided guests with a peek into one of the most unique relationships between two largely unrelated species.

Thanks to the generous support of PetSmart Charities as the national tour sponsor of *Dogs! A Science Tail*, the exhibit didn’t end when it closed its run at the California Science Center. Rather, it was carefully disassembled, packed into crates, loaded into trucks and driven across the country to Massachusetts to be installed at the Museum of Science, where it opened to the public on February 8 of this year and was enjoyed by the people of Boston. Unfortunately, with the onset of the COVID-19 pandemic the exhibit was closed on March 13. The exhibit left Boston and made its way to the Denver Museum of Nature and Science where it opened to the public on August 13 and will stay until January 3, 2021. After a brief return home to the California Science Center for some sprucing up, the exhibit is headed next to the Arizona Science Center in Phoenix for the summer and fall.
While the exhibit has been traveling, unfortunately, most of us have not. The added stress of the pandemic has led many people across the country to seek relief by taking a cue from the messages of the exhibit. Because we have a means of communicating with our dogs, they can sense our emotional state and provide comfort when we feel stressed. The simple act of gazing into a dog’s eyes or petting it releases the hormone oxytocin in both us and the dog. Oxytocin is a powerful hormone that promotes bonding and is especially important in mother-child bonding.

It is clear that people understand the emotional support dogs and other pets can provide in stressful times. The numbers of dogs and cats being fostered or adopted has risen dramatically since the start of the pandemic. For example, on Petfinder.com the number of adoption inquires in the four weeks between March 15 and April 15 jumped 122% over the previous four weeks. Some shelters have actually been able to find a home for every animal they had in their care.

In addition to the boost of oxytocin our dogs get from their interactions with us, they are also benefitting from increased attention from their owners in another way. In May, a study released by the Banfield Pet Hospital in Portland, Oregon, the largest general veterinary practice in the country, showed that 84% of pet owners had become more conscious of their pet’s health and 67% had planned to change how they care for their pets.

The results of this survey reinforce the power of the human-animal connection, which in times like these plays an integral role in our lives. And that, dear reader, was one of the major messages of Dogs! A Science Tail.

IN GRATEFUL RECOGNITION OF OUR ANNUAL DONORS

The California Science Center Foundation extends heartfelt appreciation to the following annual donors whose generous support during the period July 1, 2019 – June 30, 2020* helps sustain our hands-on exhibits, programs and operations that make the California Science Center a world-class educational resource and family destination.

$100,000 +
Sheila, Dave and Sherry Gold Foundation
Northrop Grumman Corporation

$50,000 - $99,999
The Boeing Company
Karin L. Larson
Robert and Lisa Margolis Family Foundation
THE MUSES of the California Science Center Foundation

$25,000 - $49,999

Bank of America
Chevron Corporation
Cabot H. Connery
The Walt Disney Company
Ibrahim El-Hefni Technical Training Foundation
Jeffrey Glassman, Mark Hughes Foundation
Raytheon Company
Gary Saltz Foundation
The John H. and Cynthia Lee Smet Foundation
Dwight Stuart Youth Fund
Anonymous

$15,000 - $24,999

Broadcom Foundation
The Capital Group Companies Charitable Foundation
Kathleen M. Duncan
The Green Foundation
Matt and Susan Grossman and The Arline and Thomas J. Bannan Foundation
John Randolph Haynes and Dora Haynes Foundation
Susan and Steven Lotwin
Laird and Rebecca Malamed
Roth Family Foundation
SoCalGas
Southern California Edison
Toyota
U.S. Bank
WHH Philanthropy

$10,000 - $14,999

AEG
Aerojet Rocketdyne
Betty B. Anderson
Avery and Andy Barth
Lisa Biscachipy
Nora and Alex Chaves, Parking Company of America
Chris J. Warmuth, City National Bank
Catherine Collinson
George and Gloria Deukmejian
Dubecck Family
David and Marianna Fisher
Jean and Al Fohrer
Robert L. and Susan L. Frazier
Sue and Allan Frew
The Gee Family
Gilead Sciences, Inc.
Goldman Sachs
Chad Hagle, Aventine Development Corporation
Dan Hart, Virgin Orbit
Barbara Henderson
Perlette Michèle Jura
Hans Koenigsmann, SpaceX
Leonetti/O’Connell Family Foundation
Tyler and Stephanie Leshney
The Robert H. Lorsch Foundation
Ken McBride
Martin and Donna Melone
MUFG Union Bank Foundation
Dick and Chris Newman
PNC Foundation
Alex J. Rose
Andrew and Dina Sale, EY
Sidney Stern Memorial Trust
TELACU Industries
Flora L. Thornton Foundation
Sue and Doug Upshaw
Patti and Howard Wang
Watson Land Company

$5,000 - $9,999

Sheikha Al-Thani
Melanie Behrens
Milo W. Bekins Foundation
Suzanne DeJong
Deloitte
Jason and Lois Frand
Steve and Lisa Hansen
Havasi Wilderness Foundation
Hitachi Southern California Regional Community Action Committee
Robert Hutchinson
Stuart McMullen, KPMG LLP
Charles Hazelhurst Moura Family Foundation
Nanci Nishimura
People Helping People
Gary Praglin
Robert P. Rosenberg
Don Schwarz
Jill and Neil Sheffield
Gwynne and Robert Shotwell
Patricia Renison Torres Fund
Ann Marie and Jack C. Wilder

$2,500 - $4,999

Aileen Adams, Weingart Foundation
AFCEA-Los Angeles Chapter
Paul and Sherrill Colony
Gordon and Dona Crawford
Scott and Kathy Cunningham
Mark Dalzell
Nancy and Phil Dimson
Girardi Keese
Goldman Sachs
Alyson Goodall and Eddie North-Hager
Bay Grabowski
Christine and Curt Hessler
Hitachi, Ltd.
Sarah Korda
Rob and Christie Martin
MATT Construction
Sarah L. Nothnagel
Bill Nye
Bob and Tracy Palermini
Joyce and David Primes
TCW Group, Inc.
Jacque Lyne Wallace
Anonymous

$1,500 - $2,499

Shell Amega
Amplify Education, Inc.
Joann and Stan Benson
Roberta A. Conroy
Bruce Corbin
Richard and Lynn Dotts
Marvin and Simona Elkin
Scott Gale
Dick and Eileen Garson
Pam Graham and Ryan and Rayden Jamalpour
Lindalee M. Iverson and Stephen L. Martinez
Carl David Jacobs
Robert B. Malouf
Ethan I. Martinez and Jesse D. Espinosa
Eric L. Ng
Reynolds Family Foundation
Rodger and Georgeanne Schwecke
Steven Selcer
Audri Tendler
Twig Education, Inc.
Jim and Gail Vernon
Amelia Williamson
2 Anonymous

$1,000 - $1,499

Greg Breen
Breslauer and Rutman LLC
Jeff Brooks
Tony and Noellle Budrovich
Erin Coulter
Paula J. and M. Del Vicario
Alexander Eng
Nancy Fairchild and Greg Boreham
Scott Goodman
Dan and Marnie Gruen
Diane Hamwi
Rolf and Gunilla Hastrup
Stephen D. Henry
Marvin Holen
Julia Itamura
Kathy and Kirk Johnson
Barbara Lazaroff
David Lynch
Rod and Crystal Macdonell
Dr. Andrew P. McMahon
Kenneth and Linda Owens
Colleen and Christopher Pennell
Robin Price
Christy Fujita Seki and Bill Seki
Patricia Sinclair
Norman Spieler
Alicia N. Vaz
Denise Wynn

$500 - $999

Monica Alvarado
Yolanda Atler
David Bendrihem
Carl Cooper
Clare Davis
Kenneth and Katherine Ellis
Quinn Emmett
Craig Fajnor
Peter and Elizabeth Haaker
Jordan and Felice Miller
Melvin Miller
Joe Perricone
A. Lysa Simon
Bruce and Mary Stambaugh
Cheryl and Craig Tateishi
Richard Sorensen

Lifetime Partners in Learning

John and Donna Sussman

Legacy for Science Learning Society

We are pleased to recognize and thank those individuals who have included the California Science Center Foundation in their estate plans. Membership in the Science Center's Legacy Society has no minimum gift level, as each commitment represents a lifetime pledge to the California Science Center and supports our mission and vision for the future.

Pat Ainley
Roy A. and Betty B. Anderson
Peter and Carolyn Berger
David W. Cartwright
Alfred and Grace Chan
William and Candice Cueto
Sally M. DeBoard
Marvin and Simona Elkin
Stanford Field Trust
Victoria Erteszk Foote
Pamela P. French
Denise Willett Friedman
Ms. Julie Goldner-Fuhrman
Carl David Jacobs
David Kiesling
Betty Jean Kraker
Joyce and Kent Kresa
Dr. Peter B. Landecker
Roosevelt and Paula Madison
Thomas H. Matsunaga
Mike the Runner
Satoru and Tereza Ouchida
Jill and Neil Sheffield
Bruce and Mary Stambaugh
Gordon and Frances Stong
Robert and Mary Jane Topek
Patricia R. Torres
Wendy Weissman

*Excludes contributions to the Discovery Ball benefit and the EndeavourLA Campaign, recognized separately.

For more information on the California Science Center, visit our website at www.californiasciencecenter.org or call (323) SCIENCE (724-3623). For Membership questions, please contact the Membership Office at member@californiasciencecenter.org or call (213) 744-7504.

NOTE: The California Science Center Membership Office does not send unsolicited email messages. To have your address removed from our email program, unsubscribe below or send a message to member@californiasciencecenter.org with subject line: “remove from list.” Please include your name and Member number in the body of the message.