



EVERYCHILD
FOUNDATION

Proposal Snapshot
Project: *Fire! Science and Safety*
Agency: Children's Burn Foundation

Executive Summary

The Children's Burn Foundation (CBF) is seeking \$1MM (approximately 75% of project total) in capital and pilot support over 18 months to create the ***Fire! Science and Safety*** exhibit, a permanent exhibit to help children and youth understand the science of fire and learn burn prevention and potentially life-saving safety skills. The exhibit will be augmented by educational programs and will become a center of learning about fire and burn prevention, helping reduce the number of burn injuries, especially among young children. As part of the *Creative World Galley* in the California Science Center (CSC), the exhibit will occupy approximately 1,000 square feet of space with an additional 500 square feet for educational programs adjacent to the heavily trafficked Earthquake Experience exhibit.

The exhibit will focus on a sample living environment that includes immersive experiences, such as how smoke rises, ways to escape from a fire and ultimately what to do if you get burned, along with hands-on activities and multimedia programs. There will also be an educator guide available free on the CSC website which will include pre- and post-visit classroom activities, as well as activities to do while visiting CSC -- helping engage and enhance student field trips. Evaluation of exhibit concepts and prototypes will inform the design process and once the exhibit is open, staff will examine the educational impact from both cognitive and affective perspectives. Burns are the third leading cause of accidental deaths in children from birth to nine years of age and the sixth leading cause of death for children ages 10 through 14 years and are one of the top 10 injuries treated in emergency rooms for children under the age of five years.

Capital or Program

This is a capital and pilot request, with Everychild funds supporting design, fabrication, and installation of the exhibit along with audio and video components. Funds will also support educational materials for students/teachers and the general audience.

Children/Youth Served

It is estimated that 1.3 million students, ages four to 14, will be reached during the first three years of this exhibit. CBF believes learned practices can save lives and that this program provides a platform for critical services to key audiences and a sustainable, multifaceted, and replicable exhibit.

I. AGENCY INFORMATION

Fire! Science and Safety is a collaboration between Children's Burn Foundation (CBF), California Science Center (CSC) and MySafe:LA. CBF was established in 1985 due to observation of the devastating consequences serious burn injuries have on children, most often from underserved communities. The mission of CBF is **to prevent the pain and trauma of burn injuries to children**, and to heal and give children who have suffered severe burns the opportunity to reach their full potential, physically, psychologically and socially. CBF is the ONLY foundation providing Full Recovery and Prevention & Education (P&E) services to burn survivors from the date of their burn injury until they are 18 years old. Without CBF these children would have nowhere else to go. Full Recovery provides state-of-the-art reconstructive medical treatment, emergency family assistance and psychosocial services, survivor and family camps, and the only teen support group for burn survivors in the U.S. P&E reaches children, parents, caregivers and teachers across 142 organizations annually, including LAUSD, Head Start schools, hospitals, libraries and other children's organizations within LA County, where 16.6 % live below poverty level, 57.4 % are ESL and 36% are from single parent households. The International Outreach and Education Program provides medical care and prevention education to burned children in developing countries, and support for medical professionals and burn centers. Over the past five years, **CBF has grown to become the largest and leading burn foundation in the world, helping over 71,000 children annually**. As a member of the American Burn Association and the International Society of Burn Institutions, CBF is sought out by medical professionals globally for assistance. Our new Executive Director, Sharon Townsend, who was successfully recruited before Carol Horvitz retired, brings a wealth of experience, outreach and contacts within the fire, burn and healthcare industries.

MySafe:LA is one of the first private, professional fire prevention organizations in the country providing burn education programs to children throughout the city. Programs are located at 106 LAFD Stations, all 15 Council Districts, and each of the six districts within LAUSD. The target population served by CBF and MySafe:LA are children (0-18). The population is 46% Latino, 31% African American, 15% Caucasian and 8% Asian.

CSC is a world-class educational resource with hands-on, interactive exhibits and an array of model education and outreach programs dedicated to its mission **to stimulate curiosity and inspire science learning in everyone** by creating fun, memorable experiences. An international leader in science education and informal learning, CSC incorporates a dynamic museum with robust educational programming including a professional development center for educators and a neighborhood TK-5 elementary school to improve public understanding of science, technology, engineering and mathematics (STEM). Located in an economically challenged and ethnically diverse neighborhood just south of downtown L.A., CSC is open seven days a week, 362 days per year, with free general admission. CSC has welcomed over 32 million guests since opening in 1998, with an annual average of 2.4 million including 450,000 visiting as school or youth groups, and has been ranked the most visited museum in North America outside of New York and Washington, D.C. CSC attracts one of the most diverse science center or museum audiences in the nation, with 39% Latino, 31% Caucasian, 13% African Amer., 10% Asian Amer. and 7% of other ethnicities. CSC is currently advancing the final phase of a 25-year Master Plan that will inspire generations of scientists, innovators and explorers.

II. PROJECT DESCRIPTION

A. Summary: The project team is working collaboratively to create the *Fire! Science and Safety* exhibit and requests a \$1,000,000 grant to complete the funding needed to design, fabricate and install this unique, permanent exhibit at CSC. The exhibit will be augmented by educational programs and will become a center of learning about the science of fire and burn prevention, helping reduce the behaviors that lead to fire fatalities and burn injuries, especially among children. As part of the *Creative World* gallery, **the exhibit will occupy approximately 1,000 square feet of a simulated living environment with an additional 500 square feet for educational programming adjacent to the heavily trafficked Earthquake Experience exhibit.** It will feature a home environment setting that includes immersive experiences, hands-on activities and multimedia programs focusing on the science of fire and burn physiology with a special emphasis on household fire and burn prevention (see p.7 for an exhibit concept rendering). Once funding is available, this project will take 18 months to design and build. It will reach extensively into the underserved population of L.A. and those visiting CSC with an estimated 1.3 million students served during the first three years of this exhibit. The collaborative nature of this program allows us to reach the most vulnerable children and families, and to create a sustainable, multifaceted and replicable exhibit experience and expanded educational opportunities.

B. Critical Unmet Need: Burns are the **third leading cause of accidental deaths in children from birth through nine years of age, the sixth leading cause of death for children ages 10 through 14 and one of the top 10 injuries treated in emergency rooms for children under the age of five.** A severe, nonfatal burn is the most devastating injury the human body can survive. The complex interplay of physical and psychological trauma resulting from severe burn injuries can profoundly affect the lives of children for years. Burn-related injuries to children often leave them with lifelong physical and psychological disabilities, resulting in significant financial burdens for patients' families and caregivers. CBF educates children, parents, expecting parents and other caregivers on how to stop serious burns before they happen and how to reduce the seriousness of injuries that do occur. We have the potential to draw one million guests during the first three years by installing this permanent, free exhibit at CSC, and dramatically extend public reach to provide life-saving skills to our target population of children, families and others in underserved communities who do not have access to health and safety education.

In 2015, a five-year-old boy saved his family from their burning home two days after taking CBF's P&E class. He knew to "stop, drop and roll" and understood when smoke goes high, you should get down low. This critical knowledge allowed him to crawl to his grandmother's room, wake her up and then escape the home. Their home was destroyed but no one was injured because he learned how to escape a fire. It is our duty to share this vital, life-saving information with as many children and people as possible, especially the most vulnerable.

C. Description of Project:

1. Activities to Be Undertaken: The development, fabrication and installation of the exhibit and educational programming are expected to take 18 months and to be completed within budget. The exhibit design will use an inquiry-based approach to learning, which compared with learning through reading or lectures, has been found to be most effective in holding

people's attention and successfully communicating important messages. This is the standard method utilized in developing and designing exhibits at the CSC. Selected exhibit components will be prototyped with the target audience and evaluated throughout the design process to ensure that they are appealing, relevant and effective in communicating their educational messages. The project team will convene a group of experts in all areas pertinent to the exhibit including educators to advise on exhibit development, ensuring that content is current, accurate and appropriate to the target audience.

We will also create programming and resources to complement the educational messages of the ***Fire! Science and Safety*** exhibit, such as hands-on science activities and demonstrations facilitated by CSC trained educators and educator-led interactive experiences through the exhibit to engage guests in learning about fire safety and science content. Additionally, we will develop an educator guide for TK-5th grade that will be accessible **free** to schools and youth groups on CSC's website. The guide will include pre- and post-visit classroom activities, as well as activities to do while visiting CSC to help engage guests and enhance field trips. The guide will be hands-on, science inquiry-based and consistent with Next Generation Science Standards and Common Core State Standards.

The project team will hire a firm to develop the exhibit design concept, beginning with extensive research of topics related to the science and prevention of fire and burns, leading to the formulation of educational messages for the overall exhibit and its components. The process will culminate in the production of a design document that articulates the educational goals of the exhibit, providing descriptions of interactive experiences as well as detailed design drawings. The plans include a bid package for exhibit fabrication and audiovisual and interactive media production. Exhibit staff will work closely with selected vendors during fabrication and audiovisual production through installation and opening. We will establish a planning committee, which will meet regularly to discuss project goals and implementation. It will consist of representatives from the professional development, public programming and volunteer departments, as well as two TK-5th grade teachers from under-resourced schools, ensuring that educational programs are consistent with current science standards and teacher needs. The educator guide will have a family focus that addresses home fires and accidental scalds, which are the most common type of burns to children.

2. How Will Grant Funds Be Used? The funds from the Everychild Foundation grant as administered by CBF will be used for the exhibit design, fabrication and installation; audiovisual and interactive media production and hardware; marketing, educational program development and delivery for three years following the exhibit's opening.

D. Goals and Objectives – What Will Be Achieved? The goal of the project is to engage the public in understanding the science of fire and burn prevention and learning how to avoid behaviors that lead to accidental burn injuries. This goal will be achieved through hands-on, minds-on experiences set in an immersive environment evocative of a home and participation in supporting educational programs that are relevant and authentic. The objectives of the project are to:

- Increase visitors' understanding of fire science and safety;
- Draw 1.3 million visitors to the exhibit during the first three years;

- Engage 380,000 children of the estimated 1.3 million visitors who experience the exhibit in fire safety science education programming; and
- Achieve an 85%-90% retention rate of knowledge among visitors who experience the exhibit.

The project team has achieved positive results with past programs and exhibits. CBF's P&E programs tested children's retention rate of fire and burn safety information after the interactive presentations and found the retention rate was a high 88%. Similarly, CSC conducted a 10-year study with Dr. John Falk, nationally-recognized expert on museum learning, to evaluate if and how effectively CSC fulfills its mission. The results were positive: 60% of Angelenos had visited CSC and 95% of adults surveyed said that their own understanding of science or technology was strengthened by their visit to CSC. These results assure us this type of learning provides effective results.

E. Evaluation: We will evaluate the program during the design and development process upon completion to determine the educational effectiveness of prototype exhibits and proposed programs. During the first year after the exhibit is open, we will examine the educational impact of the exhibit and educational programs from both cognitive and affective perspectives, using quantitative and qualitative measures. This summative evaluation will include observations as well as in-person interviews with a representative sampling of both young and adult guests. Data will be collected prior to experiencing the exhibit and/or educational programming from a standard sample size of 300 guests (150 young and 150 adult guests), and data from a sample of similar size and composition will be collected after they have experienced the exhibit and/or educational programming. The information collected during the evaluation process will be used by all partners to provide a measure of the cognitive impact of the exhibit in terms of learning the educational messages, as well as the level of affective engagement and satisfaction with the exhibit experience. The evaluation will help us gauge the retention of information from the exhibit and/or educational programs, and more importantly, determine any changes in attitude and behaviors (e.g. installing smoke detectors and other home safety measures) made as a result of the exhibit experience and/or educational programs. We are planning to interview a subset of young and adult visitors (60-80 from each group) six months after their visit. If warranted by the findings, we may alter the educational component of the exhibit to emphasize certain messages or to enhance a specific educational piece.

F. Replication: Once the exhibit is open, we can share its design for replication by other museums and science centers, as well as organizations such as the American Burn Association. The educational programs can be replicated as well. All design drawings, copies of media and education programs will be made available to interested institutions for a nominal fee. This is an opportunity for our donors to leave a legacy of burn prevention and safety as we educate our youth. It can reduce burn injuries, all over the world!

G. Recognition: We would be proud to recognize the Everychild Foundation by providing primary name recognition designed to fit the aesthetics of the *Fire! Science and Safety* exhibit, primary logo recognition on the exhibit webpage and other collateral materials. An example of signage will say, *Fire! Science and Safety exhibit made possible with the generous support of Everychild Foundation* (using your logo), and name only recognition from other donors.

