



## GET INSPIRED

A first look at science festivals

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## The Science Festival Alliance

The Science Festival Alliance (SFA) is a professional community of practice working together to fuel the grassroots growth of independently operated science and technology celebrations. By connecting people in a variety of disciplines, evaluating and advocating for the festival format, and coordinating activity across multiple festival sites, the SFA supports the development of more and better science festivals everywhere.

Online: [www.sciencefestivals.org](http://www.sciencefestivals.org)

Email: [connect@sciencefestivals.org](mailto:connect@sciencefestivals.org)

Phone: (617) 806-6369

Cover photo courtesy of Cambridge Science Festival



## A PARTY FOR THE MIND

**WELL OVER 100 LARGE-SCALE, COMMUNITY-WIDE SCIENCE** festivals take place every year all over the globe. Like art, music, and film festivals, they give communities a reason to celebrate. The festival format—an exciting mix of events, activities, and programs—is extraordinarily flexible. The key to success is to tailor each festival event to your local audiences.

Consider the most important moments in your region’s calendar. What events already bring people together in ways that are unique to your community? Now, envision harnessing that energy and enthusiasm in the name of science and technology.

Each science festival is different for all the same reasons that the area where you live and work is a unique source of pride. While organizers can learn from the success of existing initiatives, every science festival is ultimately the product of a team of people united behind a clear vision. The Science Festival Alliance is dedicated to helping you articulate that vision for your community and to providing guidance that will help you reach your goals.

## Science festivals past, present, and future

While people have celebrated the wonders of science and technology for hundreds of years, the modern science festival format traces its origins to annual events held in the United Kingdom beginning in the mid-1990s. Today, the majority of science and technology festivals are still celebrated outside the United States. However, by 2007 several American science festival initiatives were under way, and dozens of large-scale, community-wide festivals are now taking place every year in the United States. Each of these festivals is an independently operated, unique reflection of its host community.

**Top:** The grand finale EXPO DAY at PETCO Park at the San Diego Festival of Science & Engineering **Right:** “Science” on the Jumbotron at Science Day at the Ballpark, part of the Philadelphia Science Festival **Left:** Enjoying an exhibit at the Science Carnival main event of the Cambridge Science Festival



Courtesy of San Diego Festival of Science & Engineering



Courtesy of Cambridge Science Festival



Courtesy of Philadelphia Science Festival

## Science festivals at a glance

### Who

Designed primarily to benefit the general public, festivals can offer activities that target any number of specific audiences—from children to experts.

### What

Science festivals are multifaceted events featuring scores of programs and activities related to science, technology, engineering, and/or math (STEM).

### Where

Serving a distinct region, festivals offer programs in many public venues—reaching out to people where they live, work, and play.

### When

Recurring celebrations (usually annual) may span from a few days to a week or two.

### How

Most science festivals are managed by a lead institution, often a museum or university, but all festivals are collaborative efforts that draw on the contributions of many inspired organizations and individuals. Most science festivals require a substantial annual fund-raising effort.

“You know a festival when you see it: there is an overwhelming feeling of having almost too many great things going on at once and a critical mass of people participating in these fantastic experiences.”

**John Durant**, *Founder*, Cambridge Science Festival



### In their own words

In 2010, evaluators asked 2,465 attendees from 36 events at the Cambridge Science Festival and 10 events at the San Diego Festival of Science & Engineering to each choose three words to describe their festival experience. This “word cloud” illustrates the results, with the size of each word corresponding to the frequency with which it was used.

As this word cloud shows, the public has a great time learning about science at festivals (in the same survey 96% of participants rated their experience positively). The recent ground swell in number of science festivals in the US may be driven more by this simple fact than any other: they work. Science festivals have shown that

huge, enthusiastic crowds will turn out in the name of science and engineering.

In addition to making STEM learning fun and enjoyable, evaluation has shown that festival participants become more interested in science, learn something new about science, are motivated to seek out more science-related activities, and feel more connected to the science happening in their cities. Importantly, underrepresented groups constitute a high percentage of attendees, and many of the attendees at the festivals measured report never having had substantive interactions with science professionals before.



## WHY START A SCIENCE FESTIVAL?

To inspire, inform, stimulate, and amaze your community

**CHANCES ARE YOUR ORGANIZATION** is already committed to engaging citizens through year-round programming. Why get onboard the exhilarating but exhausting roller-coaster ride of participating in—or even running—a major festival?

The answer is *impact*. Science festivals bring whole communities together to celebrate science as a vital local force—as important to our culture as it is to education and the economy.

Festivals bring STEM education into surprising places in unexpected ways—so they reach a broad and diverse audience. Research has found over three-quarters of festival attendees report the event made science learning fun for them. And, festivals light a spark in those who participate, leading attendees to seek out additional science experiences throughout the year, and programming partners to develop new collaborations.

“Think about new and creative ways to engage young people in science and engineering, **like science festivals**, robotics competitions, and fairs that encourage young people to create, build, and invent—to be makers of things, not just consumers of things.”

**President Barack Obama**

### Benefits

#### For attendees

Festivals draw new audiences into face-to-face contact with STEM professionals and celebrate science and engineering as central elements of the region's culture and community. They encourage young people to pursue coursework and careers in science by presenting engineers and scientists as role models, highlighting career paths within the community that are interesting and lucrative, and by providing opportunities to learn by doing.

#### For scientists

STEM professionals gain high-profile exposure as well as new opportunities to be directly involved in public outreach through personal interaction not only with colleagues but with the wider community.

#### For organizers

Those dedicated to public science engagement become united in a common cause, developing connections that foster new collaborations. In addition, festivals often attract support from people and organizations that have not previously shown interest in underwriting STEM education.

#### For the community

As big, bold events, science festivals quickly become a source of pride for the local region as a place that generates knowledge, innovation, and invention.

#### For the economy

Science festivals make a strong statement about a region's leading role in science and technology, the economic drivers of the 21<sup>st</sup> century. Festivals help to develop the local workforce and foster a positive business climate with informed citizenry. Festivals can also boost tourism and local business by drawing large crowds of attendees.



Courtesy of San Diego Festival of Science & Engineering



Courtesy of Philadelphia Science Festival

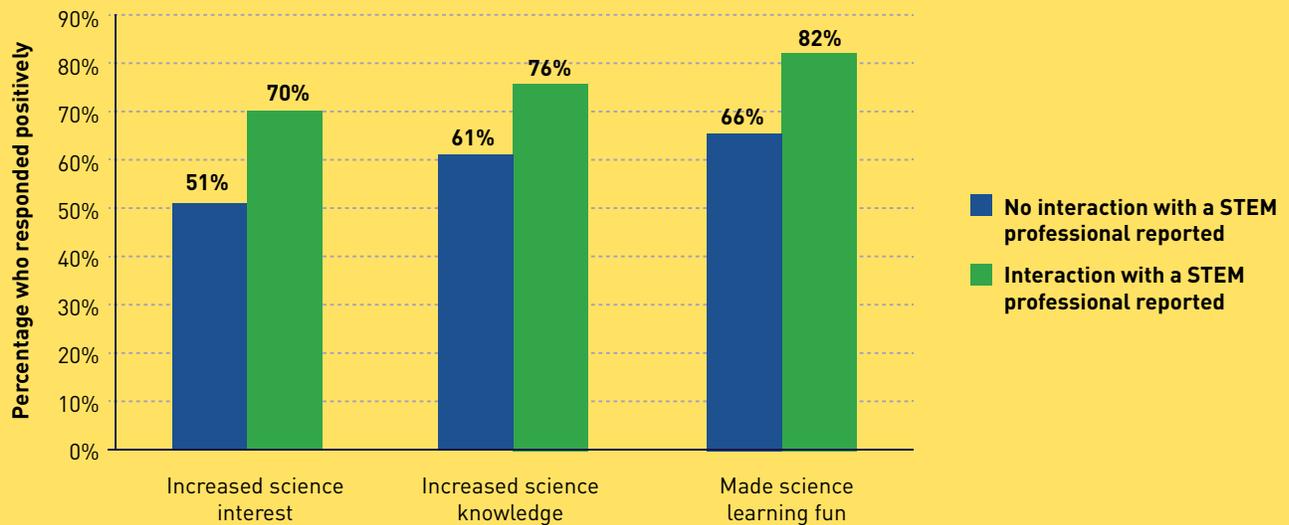
**Festivals rally the larger community for science, often bringing in new partners for science education.**

**Top:** Mascots for Life Technologies, the San Diego Padres, and Sid the Science Kid get together on the infield at the San Diego Festival of Science & Engineering **Bottom:** Mayor Michael Nutter and the Phillies Phanatic kicking off the Philadelphia Science Festival

“One of the great successes of the North Carolina Science Festival is the new relationships with other organizations for our institution. Never before have I had major sponsors cold-calling me and asking if they can support us.”

**Todd Boyette, Co-Founder, North Carolina Science Festival**

## The value of human interaction



The direct involvement of STEM professionals in public outreach is a distinguishing feature of science festivals. Festivals serve to draw researchers away from the bench and out of the field at least once a year for face-to-face interaction with the public. And it works: a regression analysis of Science Festival Alliance evaluation data shows that the most important determinant of positive learning outcomes for attendees is interaction with a STEM professional, with three specific impacts shown in the graph above.



Courtesy of Cambridge Science Festival

The variety of events in the Cambridge Science Festival allow for involved personal exchanges between the public and scientists and engineers.



Courtesy of San Diego Festival of Science & Engineering

Ask an Engineer and Ask a Scientist areas set up for the EXPO DAY at the San Diego Festival of Science & Engineering include comfortable seating for anyone interested in prolonged conversation.



# LIGHT THE SPARK

## Explore science festival profiles

WHILE EACH SCIENCE FESTIVAL IS UNIQUE, prospective planners will benefit from investigating the diverse festivals that have launched successfully around the country. The following festival profiles—a mere sampling—are provided to serve as inspiration.

To learn more about current science festivals nationwide, visit the festival finder at [www.sciencefestivals.org](http://www.sciencefestivals.org).

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**Location:** Cambridge, MA

**Population:** 105,000

**Region:** Greater Boston; population 4.4 million

**Website:** [cambridgesciencefestival.org](http://cambridgesciencefestival.org)

The first of its kind in the United States, the Cambridge Science Festival features nine days of dynamic workshops, lectures, debates, exhibitions, concerts, and plays designed to highlight the value of science, technology, engineering, and math in the community.

Events range from intimate talks to hands-on experiments, scavenger hunts, and tours. The huge number of activities makes it possible to appeal to many different target audiences, and the wide variety of venues brings the festival home for a broad spectrum of area residents.

### Defining characteristics:

- Large-scale, community-wide festival
- More than 200 events in venues across the region, most of which are free for the public
- More than 30,000 annual visitors
- More than 100 collaborators solicited via open call for entries
- At least one full-time, year-round staff member supports the festival with the help of several contractors
- Annual fund-raising effort generates budget in the mid-six figures

Launched in 2007 by the MIT Museum, the festival is a collaboration among MIT, Harvard, the City of Cambridge, Cambridge Public Schools, Cambridge Public Library, and the Museum of Science, Boston.



Photos courtesy of Cambridge Science Festival

**Left:** Seeing hidden worlds at an open lab event **Right:** Connecting science and dance in one of the festival's many unique free events  
**Bottom:** One of many hands-on activities for all ages at the Science Carnival main event

**Major sponsors:** MIT, City of Cambridge, Pfizer

### Similar festivals to explore:

*The North Carolina Science Festival*—This showcase of science and technology features hundreds of events across the entire state. [www.ncsciencefestival.org](http://www.ncsciencefestival.org)

*The Philadelphia Science Festival*—A citywide event, this festival is fueled by the best scientific and educational resources in the region. [www.philasciencefestival.org](http://www.philasciencefestival.org)

### Sampling of Cambridge Science Festival programs:

**Big Ideas for Busy People**—In a single evening, ten short, focused talks by leading scientists introduce visitors to bold theories and far-reaching concepts that range from the origins of life to streetwise math.

**Science Carnival**—The festival's opening-day event brings the thrill of science to all ages with accessible, hands-on activities led by local researchers, such as dancing robots, cooking experiments, superconductor demonstrations, and the always-popular liquid nitrogen ice cream.

**Lunch with a Luminary**—For five straight days, the festival offers intimate lunches with world-renowned thinkers, including many Nobel Prize-winning scientists. In recent years these events have been live-linked via video with audiences and experts taking part in Egypt's Cairo Science Festival.

**Curiosity Challenge**—This art and essay contest is designed to pique the curiosity of students between the ages of 5 and 14 years old, and is capped off with an awards presentation at MIT.



**Top:** Letting the kids take the wheel at the Science Carnival **Left:** Bring your lunch to a casual conversation with a Nobel Laureate (with audiences in Egypt on the screen in the background) **Right:** Closing night of the 2011 Cambridge Science Festival and the Festival of Art Science and Technology

*Photos courtesy of Cambridge Science Festival*

“The Cambridge Science Festival showcases Cambridge as an internationally recognized leader in science, technology, engineering, and math. A multifaceted, multicultural event, the festival makes science accessible, interactive and fun.”

**P.A. d'Arbeloff**, *Director*, Cambridge Science Festival

**Location:** San Diego, CA

**Population:** 1.3 million

**Region:** San Diego County; population 2.8 million

**Website:** [www.sdsciencefestival.com](http://www.sdsciencefestival.com)

Bookended by major public events, the San Diego Festival of Science & Engineering is an annual eight-day celebration that engages students, families, scientists, educators, and other community members in stimulating STEM learning experiences. The festival arranges scores of school visits by STEM professionals, inspiring kids and demonstrating that careers in science, technology, engineering, and math are accessible routes to a better future.

### Defining characteristics:

- The free, all-Saturday EXPO DAY finale is the largest single-day science and engineering event in Southern California
- On-site activities at local schools, once-in-a-lifetime field trips, and science workshops for students at local businesses and research facilities
- More than 55,000 annual attendees
- More than 150 collaborators, including leading private sector firms, major colleges and universities, research institutes, and professional science and engineering societies
- Two full-time staff members, aided by university support staff and contractors in key roles
- Annual fund-raising effort generates budget in the mid-six figures

Launched in 2009, the festival is led by the University of California, San Diego (UC San Diego), with major collaborators including the San Diego Padres, the Reuben H. Fleet Science Center, San Diego State University, and the San Diego K-12 school districts.



Photos courtesy of San Diego Festival of Science & Engineering

**Top left:** Crowds pack the concourse at San Diego's Major League Baseball stadium for EXPO DAY **Right:** Topics on exhibit at EXPO DAY cover all fields of science and engineering **Bottom:** The success of EXPO DAY relies in large part on the careful preparation of exhibitors in cooperation with the festival team

**Major sponsors:** UC San Diego, Life Technologies

### Similar festivals to explore:

*Las Vegas Science Festival:* This festival—which asks “Science in Vegas: What Are the Odds?”—concentrates on applied, natural, and health sciences in Southern Nevada. [www.lasvegassciencefestival.com](http://www.lasvegassciencefestival.com)

### Sampling of San Diego Festival of Science & Engineering programs:

**EXPO DAY**—An enormous free event, EXPO DAY draws more than 20,000 visitors to PETCO Park (home of the Padres baseball team) to enjoy over a dozen live performances and 150 hands-on activities, from building an underwater robot to finger-painting with algae.

**Science Family Day at Balboa Park**—This kick-off event brings hands-on science activities into two dozen museums at the city’s beautiful and centrally located 1,200-acre city park. Visitors can dig in a mock archaeology pit at the San Diego History Center, explore plant life in the Japanese Friendship Garden, or make a paper-based steam engine at the San Diego Model Railroad Museum.

**Nifty 50**—Fifty working science, engineering, and technology professionals head into San Diego’s K-12 classrooms to share their passion and expertise in topics ranging from oceanography to cancer research.



*Photos courtesy of San Diego Festival of Science & Engineering*

**Top:** Enthusiastic audiences pack a stage show at EXPO DAY **Left:** EXPO DAY draws well over 20,000 visitors each year **Right:** It makes an enormous statement to the community to fill a professional sports stadium in the name of science and engineering

“We show kids that scientists and engineers are regular, friendly people of all ages and interests: people who they might grow up to be. The message is that entering a science or engineering career is something you can and may love to do—and we want to help you get there.”

**Loren Thompson**, *Assistant Vice Chancellor for Student Educational Advancement, UC San Diego*

**Location:** St. Petersburg, FL

**Population:** 248,000

**Region:** West Central Florida; population 4.2 million

**Website:** [www.stpetescifest.org](http://www.stpetescifest.org)

The St. Petersburg Science Festival is a day-long, free, family event held in conjunction with MarineQuest, an annual open house sponsored by the Florida Fish and Wildlife Conservation Commission's Fish and Wildlife Research Institute. The festival is designed as a fun-filled "carnival of science" for families and the public to explore the excitement and wonder of hands-on science, technology, engineering, and math (STEM), to showcase the benefits of science in everyday life, and to connect the public with the local scientific community.

### Defining characteristics:

- Smaller-scale festival with two to four days of events
- More than 75 hands-on activities for children and adults (including MarineQuest) that emphasize STEM learning
- More than 6,000 annual visitors
- More than 50 collaborators solicited via open call for entries
- One part-time, year-round festival coordinator supports the festival with the help of an active steering committee and additional festival contractors
- Fund-raising efforts generate a budget in the mid-five figures

The St. Petersburg Science Festival, led by the Pier Aquarium and University of South Florida, was created in 2010 by a collaboration of more than a dozen businesses, educational institutions, and government agencies.



*Photos courtesy of St. Petersburg Science Festival*

**Above:** The inaugural festival builds off of the previously existing MarineQuest event

**Major sponsors:** Florida Fish and Wildlife Conservation Commission, National Oceanic and Atmospheric Administration, Progress Energy, Draper Laboratories

### Similar festivals to explore:

*Colorado Springs Cool Science Festival*—Launched as an all-volunteer effort, this festival has expanded to provide a full week of activities. [csscp.org/csfest](http://csscp.org/csfest)

*Dayton Regional Science Festival: Ignite Innovation*—People of all ages and interests are invited to enjoy STEM activities at this four-day festival in Dayton, OH. [www.daytonsciencefestival.org](http://www.daytonsciencefestival.org)

### Sampling of St. Petersburg Science Festival programs:

**MarineQuest**—Annual open house of the Florida Fish and Wildlife Research Institute. Activities include tours of the facility, presentations, and hands-on activities that will help visitors learn about the fascinating marine life in our oceans.

**WaterWorld**—This series of activities presented by The Pier Aquarium includes a Water Haiku Poetry Slam, WaterWorld Bingo, and the WaterWorld Labyrinth, where you can discover how far some people in the world have to walk to get water.

**Oil Spill Panel Discussion**—Local scientists from the University of South Florida, the U.S. Geological Survey, Florida Fish and Wildlife Conservation Commission, and the National Oceanic Atmospheric Administration showcase the Deepwater Horizon oil spill and its effects on the ecosystem.

**St. Petersburg SciCafe**—Evening event for adults serves as a preview to the main festival. Hosted by a restaurant/bar adjacent to the festival location. Topics can range from benign (Caffeine and Why It May be Good for You) to controversial (Climate Change and Public Opinion).



*Photos courtesy of St. Petersburg Science Festival*

**Above:** The more encompassing context of a science festival brought in new partners that offered activities beyond the initial marine sciences focus.

“St. Petersburg Science Festival provides an opportunity for the community to explore the wonders of marine science and beyond and be able to connect directly with the scientists. Our hope is that participants can see that learning science can be fun... and [recognize that] science is truly a part of their modern-day lives.”

**E. Howard Rutherford**, *Festival Co-Chair; President and CEO, Pier Aquarium*

### at the Missouri State Fair

**Location:** Missouri State Fair, Sedalia, MO

**Population:** 350,000 (state fair attendance for 11 days)

**Region:** Missouri; population 6 million

**Website:** [scopemissouri.org](http://scopemissouri.org)

Science and Technology Days provides four days of hands-on science, agriculture, and technology activities embedded within the 11-day Missouri State Fair. Organized by a local nonprofit outreach group—SCOPE (Science and Citizens Organized for Purpose and Exploration), this festival aims to reach rural Missourians who would not typically self-select to attend science and technology events. Along with demonstrating the relevance of science to fairgoers Science and Technology Days offers resource information that highlights ways people can stay involved, from youth participation in clubs, to ways that adults can retool their careers. SCOPE also works with collaborators to involve communities in the urban cores of St. Louis and Kansas City in the State Fair.

#### Defining characteristics:

- Two weekends of activities, including the day-long Science Street Fair, which draws 9,000 people
- More than 15,000 annual visitors
- Two dozen collaborators, including universities, technical colleges, and local businesses
- SCOPE staff dedicate time to organizing the event with the help of volunteers
- Annual budget under \$25,000

Launched in 2010, the festival is a collaboration among SCOPE, Missouri 4-H, and the Missouri State Fair. Following on its initial success SCOPE now coordinates similar activity at smaller fairs across Missouri, and connects attendees to other science outreach throughout the year.

**Major sponsors:** Monsanto



*Photos courtesy of SCOPE and the Missouri State Fair*

**Top:** Being at the State Fair means reaching a portion of the fair's massive built-in audience (notice the SCOPE banner at the entrance)  
**Bottom:** Fair-goers enjoying an Ozark Technical College booth in the science and technology area.

“We want people to see that science is accessible and relevant for our communities, and we hope to inspire a lifelong passion for exploring more.”

**Cynthia Kramer, Executive Director, SCOPE**

### at the Missouri State Fair

#### Sampling of Science and Technology Days programs:

**Aerospace Fun**—NASA exhibits, paper airplanes, and other aerospace activities are capped off by a signature event, such as an attempt to break the world record for the most water rockets launched simultaneously.

**Science Street Fair**—This big-tent event features approximately 25 booths with hands-on science experiments led by Missouri agriculture, industry, and education professionals.

**Show-Me Robotics**—Two days focused on robotics include exhibits, demonstrations, and hands-on activities, followed by robot challenges and competitions for entrants of all ages.

#### Similar festivals to explore:

*Guerrilla Science*—This organization presents science films, music, live demonstrations, interactive experiments, debates, games, and talks at existing music festivals and arts events. [guerillascience.co.uk](http://guerillascience.co.uk)

*Mind Trekkers STEM Roadshow*—A five-day road show, this event travels across the United States getting communities excited about science learning and higher education. [www.mindtrekkers.mtu.edu](http://www.mindtrekkers.mtu.edu)



Courtesy of SCOPE and the Missouri State Fair

**Above:** Attempting a world record for number of water bottles launched simultaneously provided a timed event that drew hundreds to the science and technology area of the State Fair.

“How many times do you think people will be retrained for new jobs in the coming years? This is where the new jobs will be created, and that is why this is important at every level, not just with the kids.”

**Gary Clapp**, SCOPE Board Member

**Location:** Raleigh, NC

**Population:** 404,000

**Region:** North Carolina; population 9.5 million

**Website:** [www.bugfest.org](http://www.bugfest.org)

A great example of a single-topic science festival, BugFest is a free annual event held at the North Carolina Museum of Natural Sciences in Raleigh. The day-long celebration of arthropods features a wide variety of educational and entertaining displays, exhibits, and activities—including everything from roach races to a bee-bearded lady and an arthropod zoo.

### Defining characteristics:

- More than 100 different displays and presentations on four floors of the museum, Bicentennial Plaza, and nearby streets
- Free admission to the museum and all events
- About 35,000 annual visitors
- Partners include well over three dozen groups, from North Carolina State University and the Wake Audubon Society to the North Carolina Symphony and the Boy Scouts
- Two full-time museum staff spend two-and-a-half months producing the festival, and most other museum employees help in some way; about 15-20 temporary workers are hired to help set up and staff the day of the event
- A combination of state and private funds provides a budget in the high five figures

Launched in 1996, BugFest is spearheaded by the North Carolina Museum of Natural Sciences. In 2010, BugFest served as the kick-off event for the inaugural North Carolina Science Festival, which featured two weeks of STEM activities at sites across the state.

**Major sponsor:** Terminix Company of Eastern North Carolina



*Photos courtesy of BugFest*

**Above:** True to its name, BugFest provides ample opportunities to get up close and personal with unusual arthropods.

**Sampling of BugFest programs:**

**Café Insecta**—BugFest’s star attraction, Café Insecta offers visitors the rare chance to enjoy entomophagy (the practice of eating bugs) with such dishes as stir-fried Cantonese crickets over rice and quivering wax worm quiche.

**Evening Insectival**—An outdoor street fair caps off BugFest with live bands, street performers, and a nocturnal insect tour.

**Similar festivals to explore:**

*Robot Fest*—This “day of playful invention” at Maryland’s National Electronics Museum features workshops and hands-on activities designed to spark interest among kids of all ages for a celebration “where creativity and technology meet.” [www.robotfest.com](http://www.robotfest.com)

*Let’s Talk About Food Festival*—This one-day celebration of food, health, cooking, and science takes place in Boston. [www.letstalkaboutfood.com/festival](http://www.letstalkaboutfood.com/festival)

*Maine Starlight Festival*—Held statewide, this event celebrates Maine’s stellar night sky through science, education, and the arts. [www.starlightfestival.org](http://www.starlightfestival.org)



**Above:** BugFest events use fun, attention grabbing spectacles such as the Bee-Bearded Lady (**right**) and Café Insecta (**top**) as a hook that draws audiences hungry to learn more

*Photos courtesy of BugFest*

“BugFest brings visitors to the museum who may not normally come. Not only is it educational, it is really fun! We have many of the entomologists in the state, but we also have dung beetle races and Café Insecta... there is something for everyone, and what started as a quirky event has become a real tradition in our community.”

**Kari Wouk**, Senior Manager of Presentations and Partnerships,  
North Carolina Museum of Natural Sciences



## FIRST STEPS TO GETTING STARTED

**WHILE IT'S IMPOSSIBLE TO PROVIDE** a blueprint for the unique festival that will best serve your community, here are a few guidelines to help you on your way.

**Get inspired:** Go to a science festival. Ideally, go to more than one. Experiencing what a festival looks and feels like will help you form a practical vision of what is likely to work in your community.

**Investigate the field:** Meet with organizers of other science festivals to learn what's possible. Examine events unrelated to science and technology that are already taking place in your area. These can not only serve as models but as possible partners; it's easier to draw on existing resources than to build a festival from scratch.

**Lay the groundwork:** Establish a clear and succinct overview of the goals you hope to achieve. What do you envision in terms of size, duration, and target audience? What region will you serve, and what topics will you cover? Evaluate the resources at your disposal and the areas in which you expect to need support.

**Pick a name:** Uniting a variety of programs and partners under one brand is an important function of festivals. Choose a name that will inspire audiences and collaborators alike, while giving you some freedom to grow and adapt to changing circumstances in the years ahead.

“We want people to see that science is accessible and relevant for our communities, and we hope to inspire a lifelong passion for exploring more.”

**Kathy Sykes**, *Festival Director*,  
Cheltenham Science Festival

**Above:** An open game of ping pong on an interactive koi pond projection (the “fish” chase the ball)

**Form an organization:** Convene your founding collaborators from among key local organizations—those that are so much a part of the community and of science education that you cannot imagine a festival without them (e.g. the city, the schools, the science museum). Remember that one of these will need to take the festival lead—handle finances, take out insurance, etc. Most science festivals do not start off as independent 501(c)(3)s.

**Find some champions:** Name an advisory board. Select people who are influential in the community to drum up enthusiasm and inspire donors. Ideally, they should be able to walk into a room of skeptics and leave behind a crowd of people committed to the festival vision.

**Make your pitch:** Be able to articulate why you are doing this, why it's important, and why donors should back you. (The Science Festival Alliance can help you with images and evaluation data that show that festivals work.) Develop a short list of those most likely to provide initial funding: the festival does not become reality until you have secured that first substantial donation.

**Prepare to launch:** Determine who will ultimately implement your vision—those who will provide programming, presenters, and venues—and get them on board. This process can range from hand picking top science communicators to issuing an open “call for entries.”



*Photos courtesy of Cambridge Science Festival*

**Top:** MIT grad students providing a workshop for teens on the future of space travel during the Cambridge Science Festival **Bottom:** Cambridge Science Festival's invitation-only Media Night event

“Every week I talk to other festival directors on the phone. There is nothing that replaces that. This is arranged through the SFA. I have been guided away from many of my own bad ideas through this process, and it has saved me an enormous amount of time.”

**Kishore Hari**, *Director*, Bay Area Science Festival



## THE LONG VIEW

**TO BE SUCCESSFUL, FESTIVALS REQUIRE A CRITICAL MASS** of energy and resources. Taking time at the outset to form a long-term plan will help you create a festival that can grow in size and impact over the years. Be honest in your expectations—and promises. A festival should be the high point in a year of engagement—not a solitary STEM education offering that simply pops up in your region’s calendar.

### Some tips to help you face the challenges ahead:

#### **Build on existing resources.**

Science festivals are easiest to establish in communities that already have a strong tradition of science outreach. If you don’t have such a tradition, be prepared to build the capacity to reach your community over time. Festivals have a way of inspiring STEM professionals that have never been directly involved in public outreach before, but this necessarily involves a learning curve, so even the best-situated festivals take several years to coalesce.

#### **Share credit.**

A true collaborative effort encourages each participating organization to feel invested in the success of a festival. Fostering this environment may require you to downplay the recognition of your lead organization. If the festival feels like it belongs to the whole community, rest assured that benefits will accrue to you.

#### **Underpromise and overdeliver.**

Starting a festival can bring out your inner carnival huckster. Keep the hyperbole in check.

#### **Name a point person.**

It is impossible to overstate the importance of having a dedicated point person direct the festival effort. Large-scale celebrations typically have full-time, year-round staff. Even in the initial planning stages it is worthwhile to find the resources for this position.

#### **Have a rain plan.**

Weather events happen, electricity fails, staff members quit—so be prepared. Don’t launch a festival if you’ve never run an event. Expect the unexpected and make detailed contingency plans—right down to who carries the heavy table into the tent. Then communicate that plan to everybody.

#### **Save money for next year.**

It’s tempting to throw every dime you have into your first festival, but be prudent. You’ll need money to carry over from year-to-year to keep the momentum going.



## SCIENCE FESTIVAL ALLIANCE RESOURCES

**CHANCES ARE THAT NO ONE ELSE** at your organization runs a STEM festival. But that is no reason to go it alone! The Science Festival Alliance is a growing community of science festival professionals eager to help you realize your unique vision for a STEM celebration on any scale.

### **Online:** [www.sciencefestivals.org](http://www.sciencefestivals.org)

This site serves as a clearinghouse of information related to science festivals. Sign up for the Science Festival Headlines e-newsletter, use the Festival Finder to find out what festivals are coming up next, and join the Organizer's Network for online conversations with festival professionals.

### **Get connected:** [connect@sciencefestivals.org](mailto:connect@sciencefestivals.org)

Contact the Science Festival Alliance (SFA) and start the conversation. Our staff regularly speaks with festival professionals around the country and the world. We may not have all the answers, but it's likely we can introduce you to someone with experience relevant to your situation. The SFA is also equipped to help spread the word about your festival—so let us know your news!

### **Conferences:** [www.sciencefestivals.org/conference.html](http://www.sciencefestivals.org/conference.html)

The Science Festival Alliance convenes open gatherings of festival organizers in conjunction with science festivals and conventions throughout the year. Our biennial conference draws event organizers from around the world and is often cited as the most important learning and networking opportunity available to festival professionals.

### **Science Festival Alliance membership**

Created by and for STEM festivals, the SFA welcomes new members. There are no dues, but your festival must contribute in some way to advancing the mission of the Science Festival Alliance: to foster a professional community dedicated to more and better science festivals.

### **Emerging Festival Groups**

It's not possible to list every opportunity and challenge you will face when starting a festival. Through its Emerging Festival Groups, the Science Festival Alliance helps organizers of developing festivals build working relationships with each other so that they can pool knowledge and share both problems and solutions.

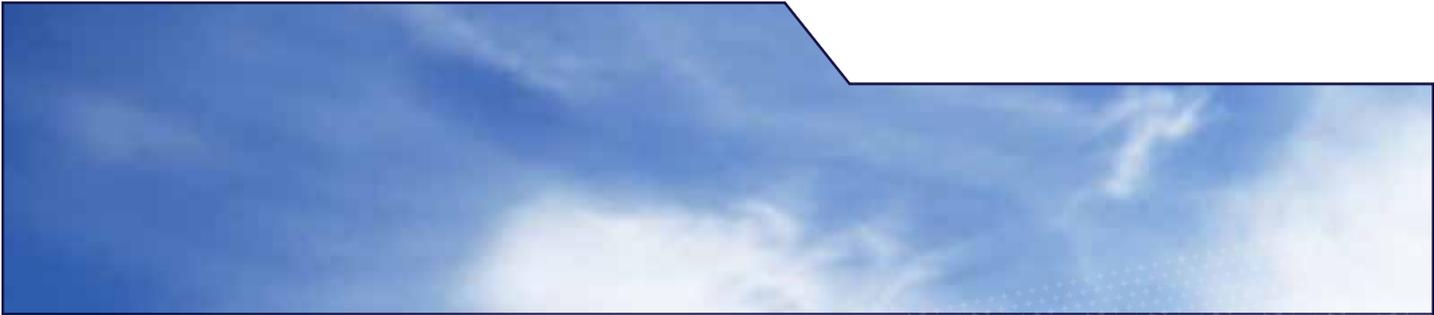
### **Other resources:**

The European Science Events Association (Eusea)  
[www.euscea.org](http://www.euscea.org)

MakerFaire

[www.makerfaire.com/mini/make-a-maker-faire.csp](http://www.makerfaire.com/mini/make-a-maker-faire.csp)

**Above:** A meeting of festival organizers from around the world during the Cambridge Science Festival



# APPENDIX

<b>Science festival evaluation findings</b> .....	<b>24</b>
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<b>Sample science festival budget</b> .....	<b>28</b>
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The materials in this appendix are relevant to the production of large-scale science festivals with budgets in the mid-six figures, and attendance in the many tens of thousands. For more specific details, additional resources, or sample documents related to other festival models, contact the Science Festival Alliance.

# Science festival evaluation findings

Goodman Research Group, Inc. (GRG) is serving as the external evaluator of a three-year NSF-funded project of the Science Festival Alliance (SFA). Evaluation activity to date has included:

- 2010: festival surveys and analysis including intercept surveys of 1,411 attendees at 10 San Diego Festival of Science & Engineering (SDFSE) events and 1,054 attendees at 36 Cambridge Science Festival (CSF) events
- 2010: focus groups and online surveys of principal SFA team members
- 2011: online survey and analysis of 97 professionals attending the International Public Science Events Conference
- 2011: festival surveys including intercept surveys of 887 attendees at 13 San Diego Festival of Science & Engineering (SDFSE) events, 920 attendees at 10 Philadelphia Science Festival events, and 984 attendees at 13 CSF events. A full analysis of these findings will be completed after the addition of data sets from the inaugural Bay Area Science Festival in late 2011
- 2011: festival partner surveys including online surveys of 213 partner representatives participating in the 2011 San Diego, Philadelphia, and Cambridge festivals

## Key findings to date:

### Equity of access:

Science festivals have great potential for supporting the participation of underrepresented groups, especially as compared to most other informal science settings.

- Underrepresented groups—minorities and women—constitute a higher percentage of “visitors” to SFA festivals than to most other informal science settings (often matching or exceeding census data for the region served)
- Many SFA festival attendees have never had substantive interactions with science professionals of the type offered by the festivals. These attendees are more likely to be female and minority.
- At SFA festival carnival and expo days, family groups constitute a higher percentage of visitors than in most other informal science settings.

### Learning outcomes for public audiences:

Science festivals can provide effective informal science experiences for the general public.

- Science festival participants have high-quality experiences (96%), report becoming more interested in science (62%), learning something new about science (69%), experiencing science learning as more fun and enjoyable (78%), and feeling more connected to the science happening in their cities.
- Interaction with science professionals during festival events is the strongest predictor of better outcomes for attendees (attendees reporting an interaction with a science professional were 15% - 19% more likely to report positive learning impacts).
- One-year follow-up with festival attendees provides evidence of continued engagement with science after the festivals, from simply looking for information on something they had learned about at their festivals, to taking part in activities related to what they had learned, to using information in their work or studies. (Based on data collected from attendees returning to 2011 CSF and SDFSE events, full analysis pending).

### Positive outcomes for professional participants:

Professionals and institutions participating in science festival programming have had new opportunities and increased confidence to reach their target audiences through the vehicle of regional festivals.

- Within six weeks of the festival, nearly half of festival partners had received follow-up phone calls, emails, visits or enrollment from festival attendees; and nearly half reported opportunities for new partnerships with local academic, civic, cultural, educational, and/or private partners as a result of the festival.
- A large majority (from 66%–83% depending on festival) of science professionals who exhibited or presented at the festival reported increased confidence in interacting with public audiences as a result.
- Professional participation in SFA festival events strongly encourages continued involvement in informal science throughout the year (while about half of professionals participating in festival events

come from organizations offering K-12 informal science education, over 85% planned to contribute to local informal science education efforts throughout the year following the festival).

### **The Science Festival Alliance works:**

Connections between science festival professionals coordinated by the SFA provide a unique and valuable system of support.

- The single most important strategy for first-year festival organizers is to travel to and participate in other science festivals, particularly where there is an existing relationship with the festival organizers (contact the SFA to begin this process).
- The SFA-organized International Public Science Events Conference, complemented—and in many cases added value that was missing in—attendees' professional association activities. The conference helped form connections and relationships among science festival organizers, STEM experts, and researchers and evaluators (including international connections). Attendees gained:
  - a sense of how their work fits into a larger field and a feeling of being a part of something bigger
  - better understanding of how public engagement in science is conceptualized
  - information and resources to start or help sustain a new science festival (including evaluation resources)
  - knowledge about reaching and impacting target audiences through science festivals

# The science festival team

## Festival staff

Almost every large-scale science festival has one dedicated festival director. Maintaining strategic relationships with collaborators and funders is typically a central function of the director's job, and one best accomplished by a staff member with a permanent position.

Staffing tends to be very lean: a 2010 informal survey of science festivals in the United States found only one office had more than two full-time staff members dedicated solely to the festival. Most organizers rely instead on a team of contractors, which can expand and contract as the workload swells dramatically in the run-up to a festival and then swiftly drops off. It is very common for the number of contractors to exceed the actual festival staff, and consultants frequently take on indispensable roles year after year.

P.A. d'Arbeloff, director of the Cambridge Science Festival, offers this straightforward advice for deciding which functions are best handled by staff: "Know what you are good at and what you have the capacity to do. Contract everything else out."

## Festival collaborators and contractors

In advance of the first Philadelphia Science Festival, organizers carefully described the roles and responsibilities of festival partners. These descriptions are provided here as an example of the types of relationships that comprise a robust festival.

### Core Collaborators

Organizations that produce and host comprehensive programming for the festival; members of this group will be directly targeted by festival staff. This group will continue to grow and change as the festival evolves over time.

Responsibilities:

- Share in the production, promotion, and hosting of featured events consistent with the mission of the festival
- Provide outreach events to organizations/schools/community groups located in neighborhoods that could not otherwise afford them
- Support public relations around collaborative events
- Provide exhibitors for carnival/expo day

- The leader of each collaborating organization will be invited to sit on the Advisory Committee
- A staff member from each organization will be invited to sit on the Steering Committee

IDEAL NUMBER: 20–25

### Steering Committee

Representatives from core collaborating organizations who actively provide programmatic guidance; members of this group are responsible for programming and outreach at collaborating institutions

Responsibilities:

- Commitment to maintaining the long-term sustainability of the science festival
- Recruitment of organizations and individuals to provide programs or serve as exhibitors or community partners
- Support and advice on the development of exciting programmatic options for the festival

IDEAL NUMBER: 20–25

### Advisory Board

Local, high-level, organizational leaders who are committed to the mission and success of the science festival; membership drawn from area CEOs, presidents, and other top community stakeholders

Responsibilities:

- Provide letters of support for the science festival stating their involvement in the event
- Support fundraising efforts
- Sign their respective organizations on as either collaborating partners or sponsors
- Designate a staff member to serve as a point person for all festival-related correspondence and activities
- Attend one meeting per year
- Attend one event during the festival

IDEAL NUMBER: 30–40

**Sponsors**

Entities (including corporations, foundations, institutions, etc.) providing financial support for the festival

Responsibilities:

- Provide funding for the festival
- Involve staff scientists/engineers as exhibitors
- Publicize the festival among employees and colleagues/associates

IDEAL NUMBER: AS MANY AS POSSIBLE

**Community Partners**

Organizations that host events or provide outreach programming during the science festival; these may be entities within larger collaborative partners. For example, a university may be a collaborative partner but a department within the university may provide programming as a community partner.

Responsibilities:

- Participate in science-themed event(s) during the festival
- Provide public relations support

IDEAL NUMBER: 50+

**Media Sponsors**

Media outlets providing free, trade, or added value publicity for the festival

IDEAL NUMBER: 1–10

**Exhibitors**

Organizations or individuals that will host a single event or activity within a large-scale carnival/expo setting; note that a significant benefit of the sponsor/collaborative partner role is exhibitor space

IDEAL NUMBER: 100 OR MORE

**Contractors**

Paid contractors providing services before, during, and after the festival; includes event planning, evaluation, public relations, design, media buying, etc.

**Vendors**

Specialized contractors providing direct services during the festival; includes food, merchandise, trash collection, etc.

**Additional possible committees**

Each festival is unique, so overall organizational structure and specific committees will vary. Other entities that have proved helpful to science festivals but are not listed below include:

- Scientific advisory committees to ensure the validity of programming
- Educational advisory committees to ensure a high standard of festival offerings
- K-12 advisory committees to guide festival work within formal school systems

“Contract people with event-planning and production experience. It’s more efficient to use them for production-heavy tasks, and leave science content to people with a scientific or education background.”

**Mark Rosin**, Guerilla Science

# Sample science festival budget

This budget is based on the average spending of five large-scale science festivals, each of which reaches many tens of thousands of attendees over the course of one or two weeks. It is provided simply to illustrate the types of spending a festival may expect—each science festival will have its own unique needs.

Three numbers are provided to reflect the great range of festival spending: the average of all five budgets and the minimum and maximum amount spent on each line item. For example, the minimum of \$16,000 for Main Event Direct Costs represents the least that any one of

the five festivals spent on that line item. Note that this applies to the Total Spending number as well: the minimum here is the smallest non-staff spending by any of the five festivals, not a total of minimum spending from this chart.

In cases where the minimum spent is zero, the number of festivals spending zero on that line item is included in parentheses. All numbers are rounded to the nearest \$500. Thank you to the Arizona SciTech Festival for compiling these figures, and to the five Science Festival Alliance member festivals that contributed budgets for analysis.

	MINIMUM	AVERAGE	MAXIMUM
Festival Director	1 FTE	1 FTE	1 FTE
Project Coordinator	0 FTE (3)	0.4 FTE	1 FTE
Administration	0 FTE (3)	0.3 FTE	1 FTE
Main Event Consultant & Support	\$7,000	\$36,000	\$71,000
Temp Hires / Volunteer Coordination	\$3,000	\$7,000	\$12,000
Main Event Direct Costs (Including Venue)	\$16,000	\$102,500	\$185,000
Other Signature Events/Programs	\$24,000	\$47,000	\$70,000
Competitions & Awards	0 (2)	\$6,500	\$23,500
Fundraising, Sponsor/VIP-Related Expenses	0 (2)	\$6,000	\$10,500
Marketing/Promotions Consultant & Support	0 (1)	\$22,000	\$55,000
Social Media	In kind	\$4,000	\$7,500
Graphics / Branding	\$5,000	\$9,000	\$15,000
Web Design / Maintenance	In kind	\$17,000	\$40,000
Printing / Signage / Giveaways / Distribution	\$22,000	\$48,500	\$90,000
Paid Media	0 (1)	\$27,500	\$53,000
Documentation, Photography	\$500	\$3,500	\$5,000
Evaluation	\$1,500	\$16,500	\$20,000
Travel	0 (1)	\$4,000	\$8,000
Other	\$1,000	\$4,500	\$10,000
<b>Total Spending (Not Including Staff Costs)</b>	<b>\$211,500</b>	<b>\$361,500</b>	<b>\$500,000</b>

# Sample science festival production timeline

## Organizing a festival in 12 months

This timeline maps out some of the tasks typically involved in organizing a community-wide science festival. While it is adopted from planning documents from large-scale science festivals in Cambridge and San Diego, tasks and timelines vary significantly from festival to festival—and even somewhat from year to year.

### Before you start

- Establish general festival goals and articulate a clear and inclusive vision
- Know how the festival will be administered (perhaps an existing nonprofit has agreed to handle financials and insurance, house staff, and assist with fundraising)
- Contact the Science Festival Alliance and become a member, visit other science festivals, and meet with other organizers
- Hire staff or appoint management/leadership
- Create a broad budget estimate
- Determine scope of festival and region served
- Carefully choose a name for the festival

### 12 months out

Fundraising and collaborations:

- Develop a fundraising plan and structure (for example: size of gift required for title sponsorship)
- Meet with potential lead donors and major collaborators (this activity will continue throughout the planning phase)
- Establish guidelines for Advisory Board and Steering Committee, appoint chairs for each, and extend invitations for members (engaging committee members will continue throughout planning phase)

### 11 months out

Programming:

- Set up basic structure of the festival (for example: an 8-day celebration with large family-friendly capstone events on the weekends, school programming on weekdays, and adult programs on three evenings)
- Establish procedure for soliciting and accepting events, activities, and exhibits from collaborators
- With collaborators, brainstorm events and activities that will become signature programs

Marketing:

- Select and meet with designer to begin creating logo and signature materials
- Set up basic website and social media platforms

Logistics:

- Establish initial detailed budget
- Confirm dates of the festival
- Reserve venues
- If the festival's main events are expected to be very large, also:
  - Confirm and finalize contracts with managing consultant as necessary
  - Obtain insurance
  - Begin physical layout with traffic plan to determine true capacity of event
  - Determine needed contractor services and issue RFP (for example: tents, electrical, security, trash, cleaning, etc.)
  - Determine what permitting processes may be required

### 10 months out

Logistics/administration:

- Confirm and finalize contracts with all consultants (including independent evaluators) as needed

Marketing:

- Develop marketing plan that includes ad buys, in-kind media sponsorships, save-the-date announcements, and festival schedule distribution
- Take action on any long-lead marketing (for example: reserve city pole banner sites)

Programming/collaborators:

- Draft "call for entries" form and guidelines (including best practices and any fee structure for festival participation), and begin distribution to potential collaborators
- Determine main signature programs with major collaborators and begin making necessary arrangements
- Review planned festival schedule to confirm broad array of activities that will serve all desired audiences

# SAMPLE SCIENCE FESTIVAL PRODUCTION TIMELINE

## 9 months out

### Fundraising:

- Incorporate marketing plan into sponsor opportunities (for example, size of gift required to receive logo placement in ad buys)
- Potential lead sponsors close to decision

### Programming/collaborators:

- Continue to recruit additional festival collaborators and exhibitors at all levels, including individual scientists and engineers

## 8 months out

### Marketing:

- Begin regular marketing meetings
- Write and distribute long-lead press releases

### Programming:

- Formalize connections with K-12 school systems

## 7 months out

### Marketing:

- Determine all major printed materials and begin design (for example: signage, festival program, special flyers, etc.)
- Prepare online platform for festival schedule of events

### Logistics:

- Begin recruiting festival volunteers

## 6 months out

### Marketing:

- Publicly launch science festival website
- Send out save-the-date postcards or other materials
- Begin promoting festival by sending volunteers to public events (for example, with a booth at a farmers market)
- Book photographer and/or videographer

### Programming:

- Launch any long-lead signature programs (for example: student contests)
- Schedule any festival programming that will take place at community venues (schools, libraries, etc.)

### Logistics:

- Fine-tune estimate of audience for main and signature events; adjust budget accordingly
- Select main event contractors and hold initial meetings with them

## 5 months out

### Programming/collaborators:

- Call for entries deadline for collaborators

### Logistics:

- Create plan for evaluating the success of the festival

## 4 months out

### Programming/logistics:

- Carefully review activities proposed by collaborators through call for entries system
- Clarify participation with each collaborator, working with each to fine-tune all details regarding the event or exhibit proposed, including descriptive wording for the festival program

## 3 months out

### Fundraising:

- Finalize arrangements with all donors

### Marketing:

- Deadline for including new events, activities, and sponsors in festival program
- Design of print and web-based festival program gets under way

### Logistics/administration:

- Conduct on-site meetings with all event contractors for main event and/or large, signature events
- Develop volunteer plan and staffing plan to ensure that all festival elements have adequate staffing and representation
- Make final adjustments to budget to reflect actual funds raised; leave a remainder for the following year

## 2 months out

### Logistics:

- Create event planning grid organizing all events and roles for participants; distribute to each individual on festival team
- Create a detailed rain plan for each festival event

### Marketing:

- Print major signage
- Distribute all printed materials, including festival program
- Long-lead marketing in place (street banners up, etc.)

### Programming:

- Send invitations to all sponsors and major collaborators for VIP recognition event (for example: a special lunch during the festival main event or a dinner beforehand)
- Hold training sessions for festival collaborators, including exhibitors at main event

### **Final month before festival**

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#### Logistics:

- Confirm all event details with all participants
- Confirm event layout for main event
- Confirm all venues
- Hold training sessions for volunteers and any temporary staff
- Begin watching weather predictions compulsively; try to get enough sleep

#### Marketing:

- Make final marketing push and distribute all promotional materials

### **Post-festival**

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#### Collaborators/fundraising

- Send thank you/success letter to all donors and collaborators
- Wrap up post-production meetings with donors, collaborators, evaluators, and key consultants/contractors

#### Logistics:

- Finalize previous year's budget
- Conduct internal event review
- Begin planning for next year!



MIT Museum  
N52-200  
77 Massachusetts Ave.  
Cambridge, MA 02139

Online:  
[www.sciencefestivals.org](http://www.sciencefestivals.org)

Email:  
[connect@sciencefestivals.org](mailto:connect@sciencefestivals.org)

Phone:  
(617) 806-6369

Science Festival Alliance founding institutions include:



Evaluation: Goodman Research Group



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