Grantee Program Evaluation Report

Prepared for

\textit{tpt}

\textit{Knight Williams Inc.}

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Introduction

Supported by a grant from the National Science Foundation’s Program for Gender Equity, SciGirls is a national outreach program designed to encourage girls’ interest in science by building capacity among outreach professionals in the area of gender-equity teaching and learning. Starting in 2005, Twin Cities Public Television (tpt), the PBS affiliate station in St. Paul/Minneapolis, awarded 24 organizations (“grantees”) with outreach grant awards, multimedia resources, and training to help outreach staff implement SciGirls initiatives in their local communities. These materials were developed from tpt’s PBS series, DragonflyTV, and included videos featuring girls engaged in scientific inquiry or in engineering projects and companion activity guides.1

To assess the impact of the SciGirls grantee program, tpt contracted with our independent evaluation firm, Knight Williams Research Communications (Knight Williams Inc.), which specializes in the development and evaluation of informal science education media projects targeting diverse audiences. We evaluated the first three years of the SciGirls program, the results of which are available online http://tpt.org/science/evaluations.

Beginning in 2008 tpt then expanded its program offerings to include SciGirls en Español, the subject of this report. Also funded by the NSF, SciGirls en Español awarded nine organizations with SciGirls resources in English and Spanish and small grants to help fund outreach projects they proposed in response to a Request for Proposals (RFP).2 As introduced on the SciGirls project website http://tpt.org/scigirls/ at the time:

Through our SciGirls en Español outreach program, we are providing educational resources in Spanish and English, customized professional development training, and funding of up to $7,000 to nine organizations across the country.

Our evaluation of the SciGirls en Español project (2008) followed a similar strategy used for the SciGirls project. Both evaluations involved a mixed methods approach that included reviewing a wide range of secondary data sources and direct accounts from the principal staff responsible for administering and implementing the grant activities. In addition, the SciGirls en Español evaluation:

- Sought the perspectives of other stakeholders involved in the grantees’ projects, including the staff/administrators from sites that hosted or contributed to the grantee projects, educators, and others responsible for interfacing with youth that participated in the outreach projects.
- Explored the factors that facilitated or helped grantee projects to succeed and the barriers or impediments that were encountered in accomplishing their project goals.
- Focused on the longer term influences of the grantee projects by arranging for grantees to provide feedback several months after the grantee project was completed, allowing them an opportunity to reflect on the above evaluation issues and to explore the project’s sustainability.

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1 The videos were also provided with a lip-sync Spanish audio track, and the activities were published in a bilingual guide. In 2010, tpt premiered a new SciGirls TV series, which is based in part on the outcomes of the SciGirls outreach efforts. However, the TV series and its companion outreach activities are not included in this evaluation.

2 Originally tpt received a total of 14 proposals, of which 9 were ultimately funded.
Background

Funded by the NSF in 2008, the SciGirls en Español award description on the NSF website stated, as of 2008, that a major goal of the project was to expand the SciGirls outreach programming to afford girls in Latino communities the opportunity to receive hands-on science encouragement and science guidance:

SciGirls is a national outreach program of DragonflyTV supported by a grant from the National Science Foundation’s Research on Gender in Science and Engineering Program. SciGirls empowers PBS outreach professionals and science museum educators, in partnership with local youth organizations, educators and parents, to deliver hands-on science encouragement and career guidance to girls in their communities. To meet the dramatic changes in U.S. demographics and the need for more women scientists and engineers, this project will expand SciGirls programming into Latino communities across the nation. SciGirls en Español will provide Spanish-language print and video resources, leader training, and grants to existing Latina-serving organizations to help encourage a greater engagement in STEM.

http://www.nsf.gov/awardsearch/showAward.do?AwardNumber=0833073

In preparing this report, the SciGirls team confirmed that SciGirls en Español was created to address the chronic underrepresentation of Hispanic women in STEM fields, and cited that within the Hispanic population, women have had greater success in achieving higher education than men, noting, for example that in 2004, 59% of all Hispanics enrolled in higher education were female. However, the project team further distinguished that while Hispanic women enroll in college in greater numbers than men, they are comparatively outnumbered by their male counterparts in science and engineering fields. The team cited that, as of 2004, among bachelor’s degrees awarded to Hispanics, Hispanic females only received about one-quarters of the degrees in engineering (24%) and computer science (27%).

The SciGirls team further confirmed that a second priority of the project is communicating what NSF-funded research has revealed about engaging girls in STEM subjects, and what strategies work best. These concepts are embedded in all the SciGirls outreach efforts. SciGirls en Español is based on the premise that Hispanic girls and women can succeed in and contribute to STEM fields, but many never realize this potential. With the growing importance of science and technological literacy, and with the growing population of Hispanic Americans, the position of the SciGirls team is that it is imperative to spark and strengthen Hispanic girls’ engagement, interest, and confidence in STEM subjects in middle school – before they make the critical choices in high school that will either open or close doors to postsecondary STEM studies and careers.

To what extent is SciGirls en Español unique in this regard? While a number of regional and national STEM enrichment girl-focused programs exist, such as Girlstart, Zoey's Room, Sally Ride Science Camps, and

Science ALIVE\(^5\) to name a few, there are relatively few media and outreach based programs designed to cultivate the STEM interest and competencies among girls of Hispanic origin. A search of the NSF website revealed very few recent or current programs targeting or even prominently serving Hispanic girls. The title and excerpts from the abstracts of six projects identified as of December 2010 briefly follow:

- **Cultivating Hispanics and African Americans Reading, Math, Science (CHARMS) in Elementary Schools for Girls Conference**
  Led by STEM educators at Texas A&M University, this project is analyzing and sharing baseline data on the achievement of African American and Hispanic girls on national and state assessments. The objectives of the project are: (1) To conduct a critical analysis of National Assessment of Educational Progress (NAEP) and Texas Assessment of Knowledge and Skills (TAKS) achievement data for African American and Hispanic female students in grades 3-6 with a focus on sub-test objectives for science, mathematics, and reading over the years 2000-2010; (2) To organize a one-day conference for 100 teachers, administrators and parents from urban, rural and suburban school districts featuring presentation of the data analysis and a national speaker who will share information and lead discussion on why African American and Hispanic girls at the elementary level should begin to think about seeking STEM careers and the required expected academic preparations; (3) To provide conference participants with STEM career information and materials; and (4) To share results of the achievement data analysis at international/national conferences (National Council for Teachers of Mathematics, National Science Teachers Association, American Educational Research Association) and submit papers for publication in scholarly journals.

- **GSE/EXT: Girls RISE (Raising Interest in Science and Engineering) Museum Network**
  Intellectual Merit: Based on nearly two decades of museum programming for low-income Hispanic and African American girls at the Miami Science Museum, this extension service project employs a train-the-trainers approach to build a network of museum-based Extension Agents dedicated to helping informal science educators attract the interest and support the persistence of minority girls, grades 6-12, currently underrepresented in STEM studies.
  Led by the Miami Science Museum, the collaboration brings together an experienced group of institutions with representation from the informal science, gender research, and engineering communities.

- **GSE/COM: Girls Understand, Imagine and Dream Engineering**
  Girl Scouts of the USA (GSUSA) is developing three separate culturally-relevant parent/girl engineering career toolkits entitled "GUIDE - Girls Understand, Imagine and Dream Engineering," for dissemination to African American, Native American and Hispanic parents and their daughters ages 13-17. The goal of this informal education resource is to inform and engage parents from the three racial/ethnic groups about engineering in a culturally-relevant manner, so that they may take an active role in encouraging their daughters to consider engineering careers. The GUIDE Toolkit will consist of: (1) the GUIDE Handbook, a customized, culturally-appropriate engineering career resource for use with both parents and girls; and (2) GUIDE Workshops to introduce the GUIDE Handbook to parents and girls from the target racial groups at Girl Scout councils and the larger community.

- **GSE/DIF- Enhancing Engineering Society Outreach For All Girls (EESO) Workshop Project: Empowering Professional Engineering Societies through Expertise in and Use of Best Practices**
  This project will support engineering professional society engineering and STEM educational outreach efforts by bringing together engineering society outreach leadership to learn more about effective outreach practices that have the ability to reach girls, including those from underrepresented populations. A primary emphasis of the project is to encourage professional societies to integrate practices that work with diverse audiences into K-12 engineering outreach activities. Enhancing Engineering Society Outreach for All Girls (EESO) will build awareness and identify best practices, based on the research literature and the programming experience of societies that

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serve underrepresented groups, and share these with EESO participants; those who are leaders in developing and implementing engineering society outreach. A national workshop and an accompanying, sustained web site are the vehicles for delivery.

- **GSE/DIS Reaching Parents of Elementary and Middle School Girls**
  Imaginary Lines will develop and distribute readable, high quality booklets to parents of girls in grades K-3 and 4-7, on gender-based factors that diminish girls' interest in science and engineering. A version will be adapted for Hispanic parents and published in Spanish. The team will also deliver informative and practical workshops for parents in both English and Spanish, and develop an online discussion forum for parents to enable them to ask questions of experts and exchange ideas and experiences with other parents.

- **Guts y Girls**
  Project deliverables include Monthly Saturday Workshops and two-week Summer Intensive Workshops. The 7-hour Saturday workshops expose girls to a wide variety of STEM/ICT jobs and professionals while engaging them in creative projects that build their confidence. During the two-week Summer Intensive Workshop, girls gain an understanding of complex systems concepts through hands-on activities and participatory simulations. Participants investigate topics of local relevance, view them through the lens of complex systems, and then apply agent-based modeling and network analysis tools. By fostering an understanding of complex systems and developing girls' computational thinking, computer programming, computational modeling, critical thinking, and spatial skills, GUTS y Girls prepares participants for a wide range of STEM and ICT fields including computer science, ecology, engineering, and mathematics. GUTS y Girls' secondary strategy is to develop and study a support system for girls by creating a virtual clubhouse using social networking to communicate with female STEM/ICT practitioners and student mentors. All project activities are designed to support the New Mexico state standards in science and math for grades 5-8. The target audience includes 300 low-income Hispanic and Native American youth. Project activities are hands-on, address real-world problems, and engage professionals from the field, all characteristics found in successful science and math programs that serve young women.

Based on this Award search, at least a handful of STEM based informal science initiatives targeting or serving Hispanic girls were identified that feature the development of diverse deliverables, including conferences, extension services, research studies, toolkits, and workshops. None of these initiatives, however, appear to involve the implementation of community based grantee programs, nor the use of established multimedia resources directed at delivering hands-on science encouragement and career guidance to girls in their communities.

**Goals of SciGirls en Español**

The overall SciGirls program was created to meet the following goals:

- To foster a greater interest in science and scientific inquiry among girls age 9 to 14, making special effort to reach girls of color;
- To provide informal science educators with research-based training, video resources and complementary print materials modeling authentic explorations of science that all girls can do; and
- To increase both the quantity and quality of girls' science encouragement programs nationwide, through partnerships with PBS stations and community groups.

With SciGirls en Español tpt added the following objectives:

- To provide Hispanic-servicing organizations with Spanish translations of SciGirls resources and the funds to support science-encouragement programs;
- To enhance and repackage existing SciGirls material to best engage Latina youth, including strategies
appropriate to this audience, drawn from current research;

- To explore the SciGirls resources for Hispanic parents with a series of Family Science Pages distributed through more than 100 Spanish language newspapers and bilingual brochures introducing the SciGirls program objectives; and
- To evaluate project results and share lessons learned with the research community, informal science educators, and community outreach practitioners.

**Grantee Selection**

Grantees were selected by project advisors, who reviewed the following criteria:

- Number of girls to be reached by the activities, including number of Hispanic females;
- Target age group and suitability of the SciGirls resources, which are targeted to upper elementary and middle school;
- Structure of proposed activity: term, number of engagement hours per girl;
- Outside partners or resources involved in the grantee’s activities;
- Qualifications and experience of the instructors or group leaders;
- Experience of the organization in programming for girls; and
- Proposed budget.

The grants were not limited to organizations that principally served Hispanic audiences. Established STEM-education organizations that wished to expand their services to Hispanic females were also eligible to apply.

The handout pictured to the right provides a brief overview of the SciGirls en Español program and brief descriptions of the grantees selected for participation.

This summary handout was also distributed by tpt at educational conferences and to those in other settings seeking more information about the grantee program.
The evaluation focused on the three main phases of the *SciGirls en Español* project: 1) the grantee award process, 2) the grantee training program, and 3) the implementation of the grantee programs. The evaluation questions that we asked relating to each phase are outlined below:

**The grantee award process**
- How did grantees learn about the *SciGirls en Español* outreach program and why did they apply? Did they have previous experience with girls’ science initiatives?
- Did grantees have previous involvement in *DragonflyTV* educational programs or activities?

**The grantee training program**
- Why did/didn’t grantees attend the training – did all those who needed to attend receive training? What were the barriers to attending for those who didn’t attend?
- To what extent did the training prepare grantees to coordinate and implement activities in their local communities?
- Did grantees feel the training was well-organized and run?
- What did they find most and least valuable?
- To what extent did the training increase awareness within grantees’ departments of issues in gender-equity teaching and learning? In particular, did the training raise staff awareness of how girls learn, experience, and enjoy science?
- Did the training adequately address issues relating to Spanish speaking audiences targeted by the program?
- Did grantees have suggestions for improving the training experience?
- How would grantees feel about an online training component, particularly to accommodate those unable to be physically present at the training workshop?

**The implementation and impacts of the grantee projects**
The evaluation examined the extent to which the 9 grantee projects were ultimately (and collectively) successful in fulfilling the criteria the projects were judged upon when selected for funding, and the extent to which the projects had a lasting impact over time. The criteria are outlined below, followed by relevant evaluation questions addressed in each case:

- **Use of *SciGirls* resources:** Did grantees make good use of the *SciGirls en Español* videos and activity guides? Was the program implemented as planned? Which of the video, print, and Web resources did grantees engage and why? How satisfied were grantees with the resources? How do they compare with other informal science resources they’ve used to address girls in science issues? What did grantees find to be the main challenges and highlights of implementing the resources they chose to use? Did grantees use the resources in ways that took advantage of the inquiry-based and authentic investigation approaches reflected in *DragonflyTV*? How did grantees fare in extending use of the resources to families? In implementing the resources, did grantees apply the key research findings built into the *SciGirls* materials?

- **Audiences served:** What kinds of individuals did the grantees’ reach through the project? Were the specified target audiences reached? Did grantees attract Spanish-speaking audiences as outlined in their
grants? Did the program impact a high number of girls from Spanish-speaking households? Was it accessible to girls from lower income families? Did the grantee organizations demonstrate familiarity with and responsiveness to the needs of local Spanish-speaking communities as originally outlined?

- **Projected vs. actual impacts**: How many youth ultimately took part in the program? What effect did the program have on individual participants? What did the girls gain from their experience with the resources? What methods if any, did grantees use to assess these gains? Was the grantee project feasible? What factors relating to, for example, the grantees’ organizational structure or program administration contributed to the project’s success or impeded success?

- **Budget**: To what extent were funds spent for programmatic costs as intended, and what accounted for variances? Was the allocated budget realistic and reasonable to accomplish the project goals?

- **Organizational structure of grantee organizations**: How many staff persons are in the organization? Is the organization part of another organization and how prominent is STEM programming for girls in their work? What barriers to conducting such programs exist in their organizations? To what extent was staff turnover a factor?

- **Barriers and facilitating factors**: What factors facilitated or helped projects succeed and what factors were barriers or impediments that were encountered as grantees worked to accomplish their projects’ goals?

- **Sustainability**: To what extent did the SciGirls en Español grant, best practices training, and resources have a lasting impact on the organization? Were the SciGirls en Español resources used after the grant period ended? What evidence did the grantees have for sustainability upon grant completion? What were the barriers/challenges to sustainability and what could a project like SciGirls do to improve the program’s chance for sustainability?
Methodology

Our evaluation methodology relied on a mixed methods approach that included three general components: secondary data review and analysis, surveys of grantees following the tpt training, and follow-up surveys and telephone interviews with grantees several months following the completion of their projects, as outlined below.

Secondary data review
We compiled and reviewed all pertinent secondary data sources for the purpose of documenting the outreach program as a whole and informing the data collection about each project. Secondary data sources included: the grant proposals submitted to the NSF; the RFP on which the proposal was based; the training agenda; the 9 grantee proposals; the grantee final reports, photographs and examples of grantee project activities provided by the grantee organizations, the SciGirls en Español activity guides and DVDs, and project evaluations conducted by the grantees.

Surveys of grantees following the training
After grantees were awarded their grants, tpt provided training to help grantees plan and implement their projects. At the conclusion of each training workshops the tpt trainer distributed evaluation forms that asked grantees to provide feedback on: the most and least enjoyable aspect of the workshop, the effectiveness of the trainer, the topics they recommended be added or eliminated, and other comments about the workshop.

Over the course of implementing the training workshops, tpt staff informally reviewed the evaluation forms to help inform each successive training. At the conclusion of the final workshop tpt then sent us the surveys for a more formal analysis and write-up. To help summarize the feedback, we entered the survey responses into Excel, and analyzed the responses using basic descriptive statistics. We performed content analyses on the qualitative data generated in the open-ended questions. The content analysis was both deductive, drawing on the SciGirls en Español grantee program objectives, and inductive, by looking at the participants' responses for overall themes, keywords and key phrases. All analyses were conducted by two independent coders. Any differences we encountered in coding were resolved with the assistance of a third coder.

Follow-up surveys and telephone interviews with grantees several months after their projects
We administered follow-up survey and interviews approximately 6-9 months after grantees completed their projects. We sought a range of viewpoints on the questions by seeking feedback from at least 2 representatives from each grantee project, including: a) a grantee representative involved in the award administration, b) a staff/administrator from the participating grantee organization that was not directly involved in applying for or administering the grant but contributed to the project’s implementation, and where possible c) an educator, community or youth liaison responsible for directly interfacing with the youth who participated in the grant project.

To establish the interview group, we contacted the primary and secondary contacts on file for each grantee project. From this initial group of 18, we were able to conduct in-depth interviews with 13 representatives, ten of whom were variously involved in blended responsibilities that covered aspects of both the (a) and (b) categories outlined above. An additional 3 representatives were less involved in the grantee project operations per se and more involved in responsibilities outlined in the (c) category by directly interfacing with the youth on a day-to-day basis.
Grantees were asked to reflect on a wide range of issues, including the training program, the implementation of their projects, their use of SciGirls en Español resources, how they measured and documented project outcomes, the longer term influences of their projects, and their perceptions of the range of factors that facilitated or served as barriers/challenges to achieving the project's designated goals.

All those participating in the survey and telephone interviews were informed that their feedback was confidential and would help guide the direction that tpt takes in planning future outreach activities. To preserve grantee confidentiality in the reporting, where quotes are provided by grantees, unique identifying information was removed. As the evaluation process required between 1-2 hours of each grantee’s time, the grantees were provided an honorarium to help acknowledge the time and effort required to provide feedback.

As these interviews were conducted with a small group of grantees and the purpose was to gather in-depth reflections using general question areas that shifted in focus somewhat depending on the grantee’s circumstances and project perspective, the sections of the report that present these findings focus on the main themes that emerged from the responses rather than providing frequency counts or basic descriptive statistics. Here again, our analysis was both deductive, drawing on the SciGirls en Español grantee program objectives, and inductive, by looking at the participants' responses for overall themes, keywords and key phrases.
The evaluation findings are presented in three parts, as follows:

**Part 1: The Grantee Award Process**
1.1 Grantees selected for the project
1.2 Grantees' reasons for seeking the grant award
1.3 Grantees' prior experience in STEM, girl-focused, and Spanish speaking initiatives

**Part 2: The Grantee Training Program**
2.1 Grantees' immediate feedback on the training workshop
2.2 Grantees' reflections on the training several months later

**Part 3: The Implementation and Impacts of the Grantee Projects**
3.1 Grantees' expected vs. actual project audiences, settings, and partners
3.2 Grantees' use of SciGirls resources
3.3 Grantees' project impacts, highlights, and barriers and facilitating factors
3.4 Grantees' sustainable/lasting project impacts
Part 1: The Grantee Award Process

Overview

This section looks at the SciGirls en Español grant award process, focusing on: how grantees found out about the grant opportunity, the organizational background of grantees funded to implement projects, and grantees’ prior experience in using Dragonfly TV/SciGirls, conducting STEM programs, and working with girls, youth of Hispanic origin, and Spanish speaking audiences. The evaluation methodology relied on the mixed methods approach outlined under Methodology, in this case drawing on the secondary data review and analysis and follow-up surveys and telephone interviews with grantees several months following the completion of their projects.

About half of the grantee organizations were informal science organizations (science centers or museums), while the rest were schools (elementary or middle) or community organizations serving girls (Girl Scouts or Girls Inc.). Two grantees were located in Texas, while the other 7 grantees were located in Arizona, New Mexico, Wisconsin, Minnesota, Illinois, Louisiana, and Tennessee.

Grantees most often found out about the SciGirls grant opportunity through a notice sent to them via email, either through an eblast from a school district, the ASTEC listerv, or a regional or state based organization focused on girls' leadership education.

Prior to participating in SciGirls en Español, few grantees had used or even heard of the Dragonfly TV or SciGirls television programming, activities or ancillary resources, an indication that TPT effectively reached applicants outside the outreach network previously established for these programs. Those who indicated prior familiarity with Dragonfly TV recalled either watching the television program at home with a child or said that the videos were available in their organization’s resource library and referred to on occasion by staff members to help inform brainstorming of activities.

Only one organization was primarily focused on STEM education among Spanish-speaking audiences, a bilingual education charter school with a mission of educating students in STEM. More often the organizations focused on: (i) the development of girls, such as Girl Scouts or Girls Inc, or (ii) STEM education, in this case science centers or other informal science education organizations with STEM education as a secondary if not primary focus.

Those involved in STEM education typically directed or worked in after-school enrichment programs, in-school science programs, or summer camps. Those involved in girls’ development took a broad based approach to empowering girls to consider various career and pursue leadership opportunities, of which fostering girls interest in and knowledge of STEM content and careers was a part, through for example girl scout troop science badge work or Girls Inc. mentoring programs. Those involved in outreach to Spanish-speaking audiences most often were brought into the SciGirls en Español projects because they were bilingual in English and Spanish and/or worked in the specific communities targeted by the SciGirls en Español project. Some were already or previously employed by the organization implementing the grantee projects, others were specifically brought into the work on the SciGirls project.
Part 1 Findings

This section looks at the SciGirls en Español grant award process, focusing on: how grantees found out about the grant opportunity, the organizational background of grantees funded to implement projects, and grantees' prior experience in using Dragonfly TV/SciGirls, conducting STEM programs, and working with girls, youth of Hispanic origin, and Spanish speaking audiences. The evaluation methodology relied on the mixed methods approach outlined under Methodology (see page 10), in this case drawing on the secondary data review and analysis and follow-up surveys and telephone interviews with grantees several months following the completion of their projects.

1.1 Grantees’ reasons for seeking the grant award

✦ How did grantees learn of the SciGirls grant opportunity?
Grantees most often found out about the SciGirls grant opportunity through a notice sent to them via email, either through an eblast from a school district, the ASTEC listerv, or a regional or state based organization focused on girls' leadership education. In one case the grantee organization's in-house development specialist was asked to research grants in STEM education, which uncovered the SciGirls program, which in turn seemed like a good match.

✦ Did grantees have prior experience with DragonflyTV/SciGirls materials?
Prior to participating in SciGirls en Español, few grantees had used or even heard of the DragonflyTV or SciGirls television programming, activities or ancillary resources, an indication that tpt effectively reached applicants outside the outreach network previously established for these programs. Grantees frequently commented that while the materials were new, they were immediately struck by how user-friendly, intuitive, flexible, and visually engaging they were as summed up by one grantee:

“No, I had never heard of them until they told us what we'd be doing This was brand new but when I reviewed the CD I really liked the approach and the materials and thought it would be easy to duplicate.”

Those who indicated prior familiarity with DragonflyTV recalled either watching the television program at home with a child or said that the videos were available in their organization's resource library and referred to on occasion by staff members to help inform brainstorming of activities, as in:

“We had seen the videos before and had referred to them before for possible activities and used as a springboard, this was the first time that we used them for a session.”
1.2 Grantees’ prior experience in STEM, girl-focused, and Spanish-speaking initiatives

Did grantees have experience working in STEM, with girls and Spanish speakers?
The majority of the grantees had prior experience in one or more of the following areas: STEM education, programs focused on girls’ development, and/or programs involving outreach to Spanish-speaking youth and families residing in disadvantaged communities. Specifically:

- Those involved in STEM education typically worked in science center programs, after-school enrichment programs, in-school science programs, or summer camps. Only one organization, a bilingual education charter school with a STEM mission, was primarily focused on STEM education among Spanish-speaking audiences.

- Those involved in girls’ development worked in programs that took a broad based approach to empowering girls to consider various career and pursue leadership opportunities. Fostering girls’ interest in and knowledge of STEM content and careers was a part of this work, through, for example, Girl Scout troop science badge work or Girls Inc. mentoring programs.

- Those involved in outreach to Spanish-speaking youth and families most often were brought into the projects before or after the grant was awarded because they were bilingual in English and Spanish and/or because they worked in the specific communities served by the SciGirls en Español project, as one grantee observed:

  "I am one of the few people at the time who had a background in Spanish" or they brought me along because I spoke Spanish and work in his community."

Two examples of how grantees described their prior experience working with Hispanic girls in their final reports are provided below.

Example 1
Community initiatives serve girls from diverse ethnic, socio-economic, and language backgrounds. These groups are flexibly structured and incorporate culturally relevant programming in addition to presenting specific topics, such as preparation for higher education, and career planning, all within a Girl Scout framework. Latina Initiative groups are unique in that their participants represent a variety of cultures—Mexican, Central and South American, and Caribbean. The Latina Girl Scout curriculum is based on content originally developed for our African American and Hmong Initiatives; the overarching goal of all of our community initiatives is to help girls build on the strengths of their heritage to promote self-esteem and prepare them to reach their full individual potential. Currently we serve 550 girls with this program.

Example 2
Girl Scouts Latina Initiative troops serve 100% of girls of color from a variety of Latino and Hispanic communities in our jurisdiction. The vast majority are Latina, Hispanic, and Chicana girls who are fluent in both languages and just a small percentage of them are monolingual. All girls are eligible for free or reduced lunch at school, and all receive scholarship support to participate in Girl Scout.
What types of grantee organizations sought SciGirls en Español awards?
About half of the grantee organizations were informal science organizations (science centers or museums), while the remaining organizations were schools (elementary or middle) or community organizations serving girls (Girl Scouts or Girls Inc.). In terms of geographic location, 2 grantees were located in Texas, while the other 7 grantees were located in Arizona, New Mexico, Wisconsin, Minnesota, Illinois, Louisiana, and Tennessee.

Two examples of how the grantee projects described their organizations in their final reports are provided below.

**Example 1**
Explora is a new kind of learning place, providing real experiences with real things that put people’s learning in their own hands. Explora is part science center, part children's museum, part free-choice school, part grandma's attic, part grandpa's garage, part laboratory, part neighborhood full of interesting people, and part of many people's lives. Currently, Explora serves 210,000 people a year, and presents 2,600 educational programs to 75,000 students from 460 schools and organizations. The mission statement reads, "Explora: creating opportunities for inspirational discovery and the joy of lifelong learning through interactive experiences in science, technology and art."

**Example 2**
Girls Incorporated of Chattanooga works with girls ages 6-18 throughout Hamilton County, Tennessee but primarily serves low-income and at-risk girls from urban and suburban neighborhoods. Through our programming, we inspire girls to be strong, smart and bold and to pursue a college education. We encourage girls to be interested in science, technology, engineering and math through hands-on activities, field trips and by learning from professional women in these fields.
Part 2: The Grantee Training Program

Overview

At the time of the grantee training program, the 42 participants that completed evaluation forms found the most enjoyable aspect to be the hands-on activities, followed by the DVD, and the *SciGirls en Español* manual. Grantees agreed that the training activities and handouts were useful training tools and that the trainer was effective, well organized, and knowledgeable of the *SciGirls en Español* curriculum. Grantees were divided about the length of the training, with some indicating the day-long schedule was too long while others felt it was too short. While the majority did not recommend adding or eliminating any topics from the agenda, a few suggested eliminating an activity to shorten the training day, while others desired even more hands-on activities. Several grantees suggested the schedule stay the same, but prioritize certain elements, such as: the use of Spanish vocabulary, tips on how to apply the inquiry steps, or examples of how other organizations are implementing *SciGirls en Español*. Finally, some grantees offered suggestions for improving the training, such as: having the scientist profiles and data templates in Spanish, reviewing all (rather than just some) of the activities, and providing supplemental training sessions or evaluation support.

During the follow-up interviews conducted approximately 6-9 months after grantees completed their projects, the 13 grantees that provided feedback on the training overwhelmingly agreed that the training was well organized and run, attributing this to trainer’s use of a clear agenda, evenly paced schedule, and thoughtful format. Most grantees also reflected that all of their project staff who needed training attended the in-person training provided by *tpt*. For those unable to attend, the grantees felt it worked well to subsequently meet with them and share videotapes of the training or notes. Several grantees indicated that they would have liked to have extended the training opportunity to parents/guardians to foster their understanding of and investment in the *SciGirls* goals. Recognizing the scheduling and logistical constraints that need to be factored in given families’ work, transportation, and care-taking commitments and challenges, grantees readily offered up suggestions for addressing these potential barriers to attendance.

When asked to reflect on what stood out about the training, grantees most often chose to praise the facilitator, particularly her bilingual fluency, knowledge, and enthusiasm. Others pointed to an inherent value and validation they felt that came with receiving a personal visit by a trainer from *tpt*. Several grantees also were quick to recall the hands-on activities, the opportunity to experience *SciGirls* as a participant, the group discussions, and the time spent on understanding the purpose of the activities and the inquiry steps. All were quick to agree that the training raised their awareness of how girls learn and enjoy science. For some it was a process of learning completely new information and strategies, for others it was more a matter of reinforcing their own prior assumptions or understanding of how girls best learn about STEM.

Grantees overwhelmingly agreed that the training prepared them to implement their *SciGirls* projects, and they typically attributed their success to three aspects of the training: the flexibility and user-friendliness of the resources, the training’s focus on the inquiry process, and being put in the position of pretending to be the girls targeted by their program. Grantees also confirmed that the training adequately addressed the needs of Spanish-speaking audiences. Those participating in both *SciGirls en Español* and *SciGirls en Familia* weighed the pros and cons of in-person vs. online trainings, seeing the benefits of both, and even a combined format. Grantees suggestions for improving the training, upon reflection, were similar to those provided at the time of the training with a couple of exceptions. Few focused on substantive changes, instead their suggestions mostly related to scheduling, logistics, and the inclusion of additional Spanish “templates” or other follow-up resources for starting up their programs.
Part 2 Findings

After making the grant awards, tpt provided training to grantees to help them plan and implement their projects. As promoted on the SciGirls BlogSpot in April 2009 (see below) the workshops were day long events held at local venues. http://scigirlstv.blogspot.com/2009_04_01_archive.html.

At the conclusion of each training workshop the tpt trainer distributed evaluation forms that asked grantees to provide feedback on: the most and least enjoyable aspect of the workshop, the effectiveness of the trainer, the topics they recommended be added or eliminated, and other comments about the workshop. For additional details on the methodology, see Methodology (page 10). Section 2.1 summarizes the feedback provided by the 42 training participants who attended one of the SciGirls en Español training workshops prior to implementing their programs. Section 2.2 summarizes the reflections of the 13 grantees who provided feedback 6-9 months later.6

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6 The extent to which the workshop served additional grantees that did not complete the evaluation could not be determined from the available project records.
2.1 Grantees’ immediate feedback on the training workshop

What did the grantees identify as the most enjoyable part of the training?

Grantees were asked to describe the most enjoyable part of the SciGirls en Español training to them personally. As the chart to the right shows, grantees overwhelmingly mentioned the hands-on activities (62%), followed by The DVD (19%) and the activity manual (14%).

Several grantees (10%) found the presenter to be the most enjoyable part of the training. Some (7%) liked the discussion sessions and a few (5%) found value in the inquiry process the training was based upon. A few others pointed to the scientists’ biographies or training format (2%). Examples of grantees' comments follow below:

The hands-on activities
- Performing investigations & icebreakers, because it was hands-on and I got to see them in action 1st hand.
- The hands-on activities. They really help understand the concept of the lesson.

The DVD
- The video programming was interesting.
- The DVD segment b/c you get to see the girls in action in their own environments w/solutions to their questions. Like also that it's totally kid driven, no adult assistance show in video

The SciGirls activity manual
- I enjoy the activity guide because it came in Spanish and English and so did the DVD...
- Love the set-up & colorful display of information on the manual...

The presenter
- Trainer is fabulous! She is full of information, eager to draw new ideas from us & quick to answer any/all questions.

The discussion sessions
- The discussions on applying the various activities and parts of the program to our situation. It was the most relevant part of the training.

Other: The focus on the inquiry process scientist biographies, the training format
- I enjoyed the bios on the scientists. It gives the girls a positive role model
- The layout. It was interactive, informative and fun.
- Liked the seven step inquiry process. One of the best statements of inquiry I have ever seen.
What did grantees identify as the least enjoyable part of the training?

Grantees were asked to describe the aspects of the SciGirls en Español training that they found least enjoyable. As the chart below shows, about one-fifth (19%) of the grantees indicated the entire training was enjoyable. Several grantees (17%) suggested the length of the training could be condensed while a few others (12%) felt there wasn’t enough time to cover everything they wanted cover during the training.

A small number of grantees indicated that the training could be more Spanish driven (5%). A few final grantees (2% each) felt it was unnecessary to go through the manual, preferred to be more active during the training (2%), or were disinterested in science and therefore had a difficult time staying engaged. Most of the remaining grantees left the question blank (17%) or said “no comment” (14%).

Examples of grantees’ comments follow.

All of it was enjoyable
- Well nothing, because the trainer went through everything in detail.

Training length, too long
- Length of the training. I feel it could be condensed into a shorter time period
- The time duration of the training. I was extremely interested, but I eventually began to doze off.
- Very time consuming. I feel like the training should be shorter.

Training length, too short
- I would have liked to do another activity or two.
- Not enough time to do more activities.

Training should focus on Spanish more
- I would have liked more of it to be in Spanish. We need to hear and learn science vocabulary and this would be a good place to start.
- The biographies, I wished Hispanic women could speak in Spanish instead of being translated from English to Spanish.

Unnecessary manual study
- Going through the manual, it seemed fairly self-explanatory.

Other: Inactivity/disinterest in science
- I enjoyed more when we were moving around and active.
- I don’t like science much, so it was hard for me to stay engaged & interested. The ring counting on trees was confusing at first.
How did grantees rate the usefulness of the training activities and handouts?
Grantees were asked to rate the overall usefulness of the activities conducted during the training and the handouts that were distributed, using a scale of 1 (extremely useless) to 5 (extremely useful). As the charts below show, roughly three-quarters of the grantees found the activities (74%) and handouts (69%) to be extremely useful.
How did grantees rate the trainer's effectiveness, organization and knowledge?

Using a scale of 1 to 5 grantees were asked to rate the presenters' overall effectiveness, organization, and knowledge. The table below presents the median ratings for each statement, followed by charts showing the percentage findings in each case. In each case grantees found the trainer to be very knowledgeable, very effective, and well organized (5.0).

<table>
<thead>
<tr>
<th>Unknowledgeable</th>
<th>5.0</th>
<th>Very knowledgeable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ineffective</td>
<td>5.0</td>
<td>Very effective</td>
</tr>
<tr>
<td>Poorly organized</td>
<td>5.0</td>
<td>Well organized</td>
</tr>
</tbody>
</table>
What topics did grantees suggest could be eliminated from the training?

Grantees were invited to suggest what SciGirls en Español could eliminate from the training. More than half the grantees (57%) suggested that nothing be eliminated from the training and one-fifth (21%) left the question blank.

A few grantees (7%) suggested eliminating an activity while a few others (5%) felt the training should be shortened or suggested trying to make time for more hands-on activities (5%).

Grantees' suggestions follow below.

Eliminating nothing from the training

- I personally wouldn’t eliminate anything
- It was all very useful and interesting
- No, because everything that we went over was very important
- No, everything was planned out right
- No, everything was useful
- No, I would not. It has everything it needs to have.
- No, it was well done
- No, make them more often for more educators and especially parents
- No, todo esta muy bien
- Nothing, everything was great
- Todo estubo muy bien

Eliminating an activity from the training

- Eliminate on investigation role play
- Maybe only doing 1 activity instead of 2
- The banana example, when working with the tree age activity. Does not correlate one another

Shortening the training

- Information about the specifics of booklet as to reduce time
- It's kind of long

Making more time for activities

- I would make the intro more succinct or more hands on
- Yes, I would take something out to make time for more activities
What topics did grantees suggest could be added to the training?

When grantees were invited to suggest topics SciGirls en Español could add to the training, the majority suggested that nothing be added (31%) or left the question blank (29%). Several suggested adding more activities (10%) or providing examples of how other organizations are implementing the SciGirls en Español program (7%). A few other grantees (5% each) suggested incorporating more Spanish vocabulary into the training or providing tips on how to apply the 7 steps of inquiry.

Examples of grantees’ suggestions follow below.

Adding more activities to the training
- Activities, need more
- Do more activities
- Maybe more activities
- The activities. I would like more details

Implementation information
- How other sites are planning to implement the program. Any problems faced & resolved by those who did the original SciGirls in English
- How SciGirls is implemented in other programs (model programs)
- More examples of what other organizations are doing. Need evaluations we can use with girls

Adding more Spanish
- Maybe more on the terminology of the language of science
- Science vocabulary in Spanish

Applying the 7 step inquiry process
- It would be good to have an example of how the 7 steps of inquiry are clearly touched or covered in a specific “investigation”
- How material apply to inquiry method

Other comments
- As a professional scientist & science educator, several comments--1. Have done nearly 20 years as science educator and 35 years as scientist--step one should include “make and observation”. 2. Step 7 should be essentially go back to steps 1 & 2. - : + is really a continuing process. You actually do this with the extension since asking more questions based on the original activity--your initial observations! State it this way!
- How about things for boys
- I would like to go over specifics of our school plan
- I would like to know about the other activities that are not available in Spanish, but I can go to the website
- Prep time for materials needed for the activities
- How to get supplies. How to really make these topics applicable & possible to young girls
What final comments and suggestions did grantees offer for improving the training?

Grantees were invited to provide additional feedback regarding the SciGirls en Español training. Several provided suggestions for improving the training, including: providing the scientist profiles and data templates in Spanish, reviewing all rather than just some of the activities, and having additional training sessions and evaluation support available to grantees. Other grantees stated their excitement to utilize the program or extended general praise for the training and trainer. A sampling of their responses follows:

Suggestions on improving the SciGirls en Español training:
- It's awesome to have these resources in Spanish! It would have been nice, however to have conducted some of the scientist interview profiles in Spanish since many of these scientists are native Spanish speakers.
- Would be nice to have blank data templates in Spanish & English in the activity guide
- I wish we could have gone through all the activities even if it was quickly.
- I would enjoy another training session in the near future.
- I think the discussion about evaluation techniques and the guidance about what to look for in evaluating the program was significant.

Excitement on implementing the program
- I'm so excited, this is a great way to encourage the girls to get more involved in science
- SciGirls en Español is a program I am excited in providing to girls in my area. Activities look very fun. Some of the activities in book not adaptable to our area
- The material excites me & is motivating me to look forward to the further development of Científicas

Overall praise for the training
- Good information, good resources
- I very much enjoyed the training, thank you Maddie.

Praise for the trainer
- The trainer was great. She was very energetic and was very excited about the whole program
- Very nice and well thought out speaker. Friendly and nice
2.2 Grantees’ reflections on the SciGirls en Español training several months later

During the follow-up interviews we conducted approximately 6-9 months after grantees completed their projects, we asked grantees to reflect on the value of the training summarized in Section 1. We sought a range of viewpoints on the questions by seeking interviews with at least 2 representatives from each grantee project, including: a) a grantee representative involved in the award administration, b) a staff/administrator from the participating grantee organization that was not directly involved in applying for or administering the grant but contributed to the project’s implementation, and where possible c) an educator, community or youth liaison responsible for directly interfacing with the youth who participated in the grant project. For details on how the interview group was established see Methodology (page 10).

The 13 grantees interviewed about their projects attended the training described in Part 2 and readily recalled the trainer as well as the workshop agenda and activities. All had a sufficient range of experience with the project to provide reflections on the following aspects of the training:

- What stood out
- How well organized the training was
- Whether the project staff they felt needed the training received it
- Whether they felt parents should have been involved
- How well prepared they felt they were to implement their programs as a result of the training
- Whether they felt the training adequately addressed the needs of Spanish speaking audiences
- Whether they felt the training increased their awareness of how girls learn science, and
- Any suggestions they had for future trainings

As the interviews were conducted with a small group of grantees and the purpose was to gather in-depth reflections using general question areas that shifted somewhat depending on the grantee’s circumstance, this section focuses on the main themes that emerged from a qualitative analysis of their responses.

What did grantees feel stood out about the training in retrospect?

When asked to reflect on what stood out about the training - good, bad, or otherwise - grantees most often chose to praise the facilitator, with many appreciating her bilingual fluency and that she was also, as variously described by different grantees: knowledgeable, informative, enthusiastic, and helpful. As one grantee elaborated:

“She was very knowledgeable and gave us pointers and tips…nice job between switching between Spanish and English, we are all bilingual and some of the scientific terms were weren’t familiar so it was nice to have that.”

Others pointed to an inherent value they felt came with receiving a personal visit by a trainer from tpt, along with the trainer in this case being particularly skilled at developing a fast rapport with attendees. Grantees cited these two elements as in turn serving an important validation function in their eyes, as one grantee explained:
“The facilitator was great, like I said the connection she made with the attendees was excellent; we had someone there who knew who we were. This is harder to do in online format.” Another elaborated: “I like the overall tone of enthusiasm it showed that there was dedication to the project—that was good to know. It validates more any program, it takes more seriously everything that is being done. They value just the fact that people traveled from different states to train you here in (state) and the interaction face to face is great, you can do nothing to replace it.”

Other aspects that stood out for grantees were the hands-on activities and opportunity to experience SciGirls as a girl in their own program would, as in:

“I guess that we were in the position of learning like we were put in the position of the girls so we knew what was coming and having us react to it we could gauge what was coming. Without the training and actually walking through the activities I’m not sure we would have been able to pinpoint what we needed to tweak.”

Grantees also appreciated the opportunity to discuss the activities and spend time on why the activities were being done and the role of the inquiry steps in the girls’ learning from SciGirls, as one grantee reflected:

“What I liked is that we did a few of the activities and discussing each step and why we are doing them, and then the focus on the scientific method.”

How well organized and run did the grantees find the training?
Grantees overwhelmingly agreed that the training was well organized and run. Despite the months that had passed since the training, grantees were quick to point out the trainer’s use of a clear agenda, evenly paced schedule, and thoughtful format. Many elaborated on various facets of the event that were most useful to them, as in:

“Yes, even when I knew the content, I enjoyed doing the activities and I think the structure was well-organized. Maddie did a good job on running the program, introducing and closing the activities and showing the materials.”

Did grantees feel that the key project staff who needed the training attended the in-person trainings and were able to participate?
The majority of grantees felt that all of their project staff who needed training attended the in-person training provided by tpt at each grantee site. For those unable to attend, the grantees cited: lack of project staff in place before the project officially started, key project staff traveling on the day of the training, and the training be held during the summer months, as one grantee reflected:

“When the training occurred school wasn’t in session, and parents tend to disappear in the summer, teachers use it as vacation time, it is hard to coordinate the schedules. So we need that to happen in the fall.”

To accommodate those who missed the training, grantees generally felt they were able to use what they learned to bring these individuals up to speed. In one case a grantee videotaped the training so she could later show it to a bilingual educator who was integral to the project but out of the country on the
day of the training. The grantee indicated this was an effective back-up plan and that she and the educator went over the video almost frame by frame in places to drive home certain points. In another situation, students from a local university chosen to be SciGirls mentors were unable to attend the training due to class scheduling issues. In this case as well the grantees felt they were able to go over with those students what they missed through the notes they took during the training and the materials they had received. When asked if having a videotape of the training might have helped in this situation, the grantee indicated it would have been a very useful resource, but wasn’t thought about at the time.

Several grantees indicated that they would have liked to have extended the training opportunity to parents/guardians, as it would have helped: foster their understanding of the SciGirls program goals, enhance their appreciation of the need to engage girls in STEM, and “allow them to feel part of it” as a few grantees observed. However these grantees also qualified that including parents can involve additional scheduling and logistical constraints that need to be factored in, as it can be difficult, for example, for families to attend events held in the summer or to devote a full day to a training event given work, transportation, and care-taking issues. A couple of grantees suggested spreading the training out over a two-day period and offering child-care while others suggested it might be more feasible to just offer a demonstration and reception session tailored to families and the community later in the day.

**Did grantees feel the training prepared them to implement their projects?**

Grantees overwhelmingly agreed that the training prepared them to implement their SciGirls projects. Most often they reflected on the three aspects, the flexibility and user-friendliness of the resources, the training’s focus on the inquiry process, and being put in the position of pretending to be the girls targeted by their program. With respect to the resources, grantees were consistently positive about the flexibility of the resources and supporting supplies and the extent to which they could be adapted, expanded, and substituted to fit the circumstances of the program setting and the needs and interests of the girls participating. In terms of the focus on the inquiry process, grantees appreciated that the training emphasized that they need not be invested in the outcome of the activity so that if a session doesn’t go according to “plan” this is not only acceptable but sometimes preferable, as one grantee reflected:

“It wasn’t about doing it right or wrong, it was about the girls trying out the 7 steps of inquiry. That made me feel more comfortable that I didn’t have to be perfect but leave it more in the girls hands but I was there more to mediate, and guide them.”

Finally, many grantees reflected that, particularly in retrospect now that their projects were over, that they found considerable value in the trainer having them pretend to be the girls they would be teaching so they could see the activities through the girls’ perspective, and in a hands-on capacity, as one grantee recalled:

“Yes she had an agenda and she distributed it at the beginning of the day like early morning and she actually brought props with her and we had to pretend to be the girls and she showed us what our activity was going to be and gave us the problem and we had to design our own airplane and then measure…and record…and going through the whole scientific method…and we were the girls and she was the presenter so it gave us some ideas so we could see what work with the girls and how we would need to tweak for the girls, who were 6-8 in our case. So we could look at whether our 6 year olds would be able to make the planes and fly them? So we gave them gave extra timing to this and used some volunteers with that age group.”
Did grantees feel the training adequately addressed the needs of Spanish speakers?
Grantees generally felt the *SciGirls en Español* training adequately addressed the needs of Spanish-speaking audiences, particularly given the time constraints of a one-day training and the vast amount of material to be covered. Those participating in both *SciGirls en Español* and *SciGirls en Familia* made a point of praising the fact that the trainer who presented the in-person *SciGirls en Español* training was fluent in Spanish and bilingual, and did a good job of moving fluidly back and forth between English and Spanish. More often than not, these grantees then also distinguished this praise in contrast to the way the online Ning training was facilitated for the subsequent *SciGirls en Familia* grant, observing that such a fluid bilingual flow was largely missing in the online training, as in:

“We didn’t have any issues because Madeline spoke fluent Spanish and all the volunteers and the agencies they spoke fluently. But the webinar with the new one….the first problem was with language.”

When elaborating most often these grantees desired for someone like the Spanish-speaking trainer of *SciGirls en Español* to play a more active role, if not lead, the webinar, blogs, and related online activities.

At the same time, some of these grantees observed that the online training was able to go more in-depth into introducing, illustrating, and discussing strategies for engaging girls from various Hispanic communities, which wasn’t possible in the context of the in-person training. Most felt the in-person *SciGirls en Español* training accomplished all it could given the allotted time. Some however indicated they would have appreciated having access to strategies and case studies for dealing with some of the language and cultural issues they faced in their projects, such as:

- Helping to get buy-in and commitment from Spanish speaking families,
- Finding and getting buy-in from local organizations capable of hosting *SciGirls* programs, such as churches, community centers, and events where families gather, and
- Dealing with logistical and social tensions that can arise when working with bilingual, English, and Spanish dominant girl audiences simultaneously.

Did grantees feel the training raised their awareness of how girls learn and enjoy science?
Grantees consistently agreed that the training raised their awareness of how girls learn and enjoy science. When asked to reflect on these findings and the specific *SciGirls* strategies they had learned about for engaging girls in STEM, grantees tended to recall that either: a) the training presented them with completely new information as they had little prior experience working with girls in STEM education, or that b) the information reinforced their own prior assumptions or understandings about girls learn. Some of the comments that reflect this range of experience included:

- Yeah, absolutely for us a lot of what we do in (our program) connected with what SciGirls tried to do, like girls take control of their session and what they want to do rather than them hover around telling them what to do,. It taught me a lot about how to make a program more girl led and even if it doesn’t turn out the way intended it’s more important to see it’s about the girls understanding the content and learning about science.
- It really did, it kind of allowed me to shift my focus from general, let’s help these kids out to empowering little girls, a help in focus.
It did really because I had never really thought that girls don’t go into the science field as much as boys so it really opened my eyes and now if I run a science fair at the museum I try to get the girls more involved like a lot of times I try to get kids interested in doing the activities and a lot of times the girls aren’t interested so I try to encourage them. Here in (town) it has to do with Hispanic culture and girls are sometimes taught by traditional families that it might not suit them and they are to stay in the house, and it is a factor.

What suggestions did grantees have for improving future trainings?
Grantees’ post-project suggestions for improving future trainings were largely in line with those proposed immediately following the training. Their suggestions most often included:

- Supplementing the in-person training with online training for more in-depth analysis and sharing of ideas and issues across grantee programs;
- Scheduling the training date during months that school/work is in session;
- Including even more information on working with Spanish-speaking audiences and/or including a section on bilingual learning and teaching processes;
- Opening the program to parents and promoting it accordingly;
- Splitting the schedule from a 1-day training into a 2-day period to reduce density of learning, and/or offering a one-day training on 2 different days for those unable to attend one of the dates.

A few grantees, particularly those who lacked direct and ongoing access to Spanish-speaking staff prior to launching their projects, suggested that tpt provided a wider selection of project template materials that grantees could adapt in their programs, such as registration forms, liability and medical release forms, and letters home about project expectations, fieldtrip dress code and dates.
Part 3: The Implementation and Impacts of the Grantee Projects

Overview

This section describes the range and variety of the 9 grantee projects and highlights the extent to which grantees' final project activities reflected their original expectations. This aspect of the evaluation relied on secondary data sources including: the grant proposals submitted to the NSF; the RFP on which the proposal was based; the training agenda; the grantee proposals; the grantee final reports, photographs and examples of grantee project activities provided by the grantee organizations, the *SciGirls en Español* activity guides and DVDs, and any project evaluations conducted by the grantees. In addition, we sought grantees' longer term reflections on their grantee project via an online survey and/or the telephone interviews. As in Parts 1-2, we sought a range of viewpoints on the question by seeking feedback from at least 2 different representatives from each grantee project.

Approximately 700 girls were served by the grantee program overall. Prior to commencing their projects, grantees on average expected to target approximately 80 girls, with individual grantees expecting to serve as few as 15 girls to as many as 260. About half of the grantees exceeded their projected number of grantees, while the other half generally met their expected count. Prior to commencing their projects, grantees on average expected that 87% of the girls served by their *SciGirls en Español* projects would be of Hispanic origin, with individual project estimates ranging as low as 50% to as high as 100%. Although not all grantees' reported final numbers at the conclusion of their projects, most of the grantees' attendance reports, which included a breakdown of participant race/ethnicity, approximated their initial projections.

Grantees generally felt they reached the target audiences they originally set out to reach. Grantees ended up working with the same partners they named in their grants to *tpt*. Most worked with 2 or more community partners. The most frequent choice of partners included: community centers, elementary schools, sororities, tutoring programs, mentorship programs, youth centers, churches, government agencies, universities, theaters, science centers, museums, zoos, and farms. Most grantees planned and ultimately implemented their *SciGirls en Español* projects within summer camps or after-school/weekend programs, including science clubs and Girl Scout troops. Grantees' final choice of project setting deviated little from their initial expectations.

High levels of participation were found across most programs, regardless of program type. There was little attrition, and only occasional absences reported due to sickness or family emergencies. All but one program offered 100% free participation, with one program offering 50% free participation. Some grantees designed their projects, and project goals, specifically around the *SciGirls en Español* offerings, while others implemented projects within programs that also met broader goals, for example, addressing girl empowerment, leadership, and STEM education. The length of grantees' programs closely reflected initial expectations, with summer camps most often comprising month-long sessions and after-school programs comprising weekly or bi-weekly meetings held over a 2 to 6 month period.

All of the grantees felt they were able to make good use of the *SciGirls* resources. The videos were often but not always used. Those who didn't use them indicated one of three factors: 1) encountering challenges in having access to the needed technology available for showing them; 2) having a preference for getting straight to the hands-on activities given time constraints and project priorities; and/or 3) receiving feedback received from the participating girls after seeing the initial videos and thinking that the girls featured in the video not look like them and that a straight translation to Spanish wasn't as compelling as girls speaking Spanish. Grantees
typically reported using all of the provided SciGirls materials, including regular use of the Icebreakers, DVDs, and Activity Guide. Grantees tended to identify three aspects of the SciGirls resources that stood out for them: the bilingual component, the usability of the resources, particularly relating to their format, simplicity, flexibility, and use of everyday materials, and the fact that the activities interested girls, hooked them in, and helped them relate what they learned to their own lives. The main challenge grantees faced in implementing activities involved their residing in vastly different environments than the ones modeled in the SciGirls activities.

While grantees consistently praised the training and related SciGirls resources for raising their awareness about how girls learn and enjoy science they were less certain about the extent to which they actually applied specific findings when implementing their programs. Many grantees indicated that they couldn't recall the strategies, or indicated that they were a little bit fuzzy or got lost to their own ways and process of working with girls. Among the strategies SciGirls featured, the two that seemed to stand out for grantees was that girls benefit from collaboration and from relationships with role models and mentors.

Grantees' final reports tended to focus more on their programmatic details than on their impacts. Although about one-third of the grantees reported that they conducted some type of evaluation, using either surveys or interviews. The reports in these cases do not describe specific results, but offer sample quotes or a general summary of grantees' observations. Other grantees described anecdotal evidence of project outcomes. These grantees described their project outcomes in positive terms, with no negative unintended impacts cited. Several unintended positive effects were raised, however. In some cases grantees discovered that their project cultivated teamwork, leadership, and proficiency in STEM teaching among project staff, volunteers or teen mentors. In other cases, grantees observed a multiplier effect that went beyond the participating girls themselves and extended to the sisters, cousins, and mothers who accompanied grantees at the SciGirls en Español session.

Grantees reflected on a number of factors that they felt facilitated or helped their project to succeed, and contribute to these highlights, including: outings and final culminating program, community networks, organizational support, and staff rapport in implementing their programs. The main challenges or barriers they faced involved working/communicating with families, girls, or community organizations and logistical/time constraints. Grantees indicated a recurring “there is never enough budget” sentiment yet acknowledged that they were generally able to accomplish what they needed to. Their main wish would be for funds to help cover transportation, more hands on activities, take-home materials the girls could share with their family members, and fieldtrips. They also suggested seeking more in-kind support and donations from surrounding organizations or organizations that serve the community.

Most grantees identified at least one way that their organization or a partner organization continued to benefit from or use the SciGirls en Español materials, training, or project-specific programming after the life of the grant. Grantees were also able to describe how their project had a lasting impact, or left some kind of footprint, on their organization, the girls that participated, and the staff/volunteers that participated. Nearly all of the grantees also identified one or more ways that the SciGirls materials had been used in the months since the grant period ended. At a minimum, the resources were available in a resource library or office setting for use by other staff members at the grantee organization. Most grantees also named specific examples of how the resources had been adapted for use in various other settings including at booths at local community festivals or events, in camps, afterschool programs. Grantees provided a variety of suggestions for ensuring sustainable impacts over time, including: partnering with other organization, fostering opportunities for collaboration, updating SciGirls resources with new materials, providing ongoing support in Spanish, having online outlets for continued participating, providing technical and evaluation support.
Part 3 Findings

This section describes the range and variety of the 9 grantee projects and highlights the extent to which grantees’ final project activities reflected their original expectations. As noted under Methodology (page 10), this aspect of the evaluation relied on secondary data sources including: the grant proposals submitted to the NSF; the RFP on which the proposal was based; the training agenda; the grantees' proposals; the grantees' final reports, photographs and examples of grantee project activities provided by the grantee organizations, the SciGirls en Español activity guides and DVDs, and any project evaluations conducted by the grantees.

Pictures provided in one grantee’s final report
In addition, we sought grantees' longer term reflections on their grantee project via an online survey and/or the telephone interviews. As in Parts 1-2, interviews we sought a range of viewpoints on the question by seeking feedback from at least 2 different representatives from each grantee project. In this case though, grantees were asked to reflect on: the grantee training program, the implementation of their projects, their use of SciGirls en Español resources, how they measured and documented project outcomes and longer term influences of their projects, and their' perceptions of the range of factors that facilitated or served as barriers/challenges to achieving the project’s designated goals.

*Girls involved in SciGirls projects.*
3.1 Grantees’ expected vs. actual project audiences, settings, and partners

How many girls were served by the grantee program and were expectations reached?

Approximately 700 girls were served by the grantee program overall. Prior to commencing their projects, grantees on average expected to target approximately 80 girls, with individual grantees expecting to serve as few as 15 girls to as many as 260. About half of the grantees exceeded their projected number of grantees, while the other half generally met their expected count.

Program attendance information provided by one grantee project

To what extent did grantee projects end up serving girls of Hispanic origin?

Prior to commencing their projects, grantees on average expected that 87% of the girls served by their SciGirls en Español projects would be of Hispanic origin, with individual project estimates ranging as low as 50% to as high as 100%. Although not all grantees’ reported final numbers at the conclusion of their projects, most of the grantees’ attendance reports, which included a breakdown of participant race/ethnicity, approximated their initial projections.
In retrospect, did grantees feel their project reached the target audiences?
Grantees generally felt they reached the target audiences they originally set out to reach. Some grantees qualified their impacts in this area, noting that they:

- Did not reach as many girls as intended;
- Planned to attract a higher percentage of girls less science attentive or interested in science;
- Had envisioned finding a more conducive place in the local community to meet with girls on an ongoing basis; and/or
- Had difficulty sustaining a core number of grantees over the course of the program and convincing the parents of the value of consistent attendance over time.

In many of these cases the grantees felt that earlier and better communication with the girls families could have played a role in reducing these challenges as the families were involved in many religious events during the weeks, held traditional views that women are supposed to stay in the house, didn't fully comprehend what SciGirls represented given that lack of translation for the name. Grantees who were able to initiate parent communication early on and manage this on an ongoing basis by, for example, inviting families to their programs and providing letters and take home materials in Spanish, found that they became advocates for SciGirls and helped spread the word to other families.

How many project staff persons were dedicated to the grantee projects?
The grantees identified an average of 4 key personnel for their projects with a low of 3 to a high of 5 personnel named by individual projects, indicating general consistency among projects as to the number of primary persons taking a leadership or coordination role on the projects.

Promotional materials from one grantee program offered in both English and Spanish
To what extent did grantees work with the partners they initially named?
Most grantees ended up working with the same partners they named in their grants to tpt and worked with 2 or more community partners. The most frequent choice of partners included: community centers, elementary schools, sororities, tutoring programs, mentorship programs, youth centers, churches, government agencies, universities, theaters, science centers, museums, zoos, and farms. About one-third of the grantees added new partners not named in their grants, most often local science centers or museums. An example of a grantee project describing its collaboration with multiple partners in its final report follows:

We had many partners for our June SciGirls camp. Crabtree Farms is a 22 acre urban farm in Chattanooga that conducts research and has educational programs. The Creative Discovery Museum is recognized as one of the premier hands-on children's museum in the region. The Chattanooga Nature Center has been teaching about conservation even before 'being green' in the Tennessee Valley was a popular thing to do. The Tennessee Aquarium is the only aquarium in the United States accredited as a supplementary education school by the southern Association of Colleges and Schools Council on Accreditation and School Improvement. The American Museum of Science and Energy in Oak Ridge, Tennessee educates visitors about energy and its uses.

In what settings did grantees most often implement their projects?
Most grantees planned and ultimately implemented their SciGirls en Español projects within summer camps or after-school/weekend programs, including science clubs and Girl Scout troops. Grantees' final choice of project setting deviated little from their initial expectations.

To what extent did participant attrition and cost play a role in project viability?
High levels of participation were found across most programs, regardless of program type. There was little attrition, and only occasional absences reported due to sickness or family emergencies. All but one program offered 100% free participation, with one program offering 50% free participation.

Did the configuration and duration of grantees' projects fall in line with expectations?
Some grantees designed their projects, and project goals, specifically around the SciGirls en Español offerings, while others implemented projects within programs that also met broader goals, for example, addressing girl empowerment, leadership, and STEM education. The length of grantees' programs closely reflected initial expectations, with summer camps most often comprising month-long sessions and after-school programs comprising weekly or bi-weekly meetings held over a 2 to 6 month period.

Was the allocated budget realistic and reasonable to accomplish grantees' goals?
Grantees indicated a recurring “there is never enough budget” sentiment yet acknowledged that they were generally able to accomplish what they needed to. Their main desires would be for funds to help cover transportation, more hands on activities, take-home materials the girls could share with their family.
members, and fieldtrips. They also suggested seeking more in-kind support and donations from surrounding organizations or organizations that serve the community, like from local snack companies, or lumbar companies.

**What programmatic elements or strategies did individual grantees bring to their projects above and beyond what was featured in *SciGirls en Español*?**

Grantees described a variety of elements they brought to their projects. Most often they included the use of add-on events such as: guest speakers, field trips, student presentations, career events, parent receptions and Girl Scouts events such as the traditional investiture ceremony, badge-work, and council sponsored activities. Some grantees described specific strategies they used in their projects to increase attendance and programmatic investment, including:

- Involving female teen or college mentors on an ongoing basis;
- Including boys in the participant mix; and
- Encouraging friends and families to attend to help address transportation issues.

The following more in-depth example shows some of the different ways that one project found to meet the needs of local communities, as well build off their organizational and programmatic strengths and the *SciGirls* resources.

*Girls and their families conducting SciGirls activities*

We visited each community center once each week for 8 weeks during the months of June and July. We then restarted the program in the fall for an additional 4 visits per center, which included a parent reception at the last visit. Each community center came to a field trip at the museum as well. All of the children involved were low income and Hispanic and all programs, field trips, and receptions were at no expense to the families. Although we could not offer this activity to the girls alone, we were able to break into groups ensuring that the girls were always working together and that they had female group leaders. We had hoped to have one consistent group of children for the entire program, but the community center directors opened it to anyone who had come for the free meal program immediately prior. We ended up with a fairly consistent group through the summer, and then mostly new children came to the projects in the fall. In all we included 81 girls with about 28 of them being regular participants. A similar number of boys were also served.

The programs were structured as in the activity guide; each session began with an ice-breaker which led into a more fully developed investigation. We chose the activities in the Guide that had an appeal to the communities in which we worked; we also presented investigations that we have developed at our museum which mirrored the inquiry-based process of the *SciGirls* activities. This allowed us the flexibility to match interests with our unique population and modify activities for the large number of children with whom we worked. The Activity guides were valuable for activity ideas, inspiration for other activities, and especially for vocabulary. Each activity, our bilingual staff was given a list of vocabulary...
words to focus on. The children were given Spanish hand-outs, including vocabulary words, with open ended questions to complete using words or drawings as desired. A DVD was given to each Community Center to show at their convenience. Additionally, DVDs were given to the families at the end of the project reception. They were very well received by the children and parents’ both.

3.2 Grantees’ use of the SciGirls resources

 fase to what extent did the grantees feel they made good use of the SciGirls resources?

All of the grantees felt they were able to make good use of the SciGirls resources. The videos were often but not always used. Those who didn’t use them indicated one of three factors: 1) encountering challenges in having access to the needed technology available for showing them; 2) having a preference for getting straight to the hands-on activities given time constraints and project priorities; and/or 3) receiving feedback from the participating girls after seeing the initial videos and thinking that the girls featured in the video not look like them and that a straight translation to Spanish wasn’t as compelling as girls speaking Spanish.

The SciGirls activities were used in all the grantee programs. Here again, grantees pointed to their user-friendliness and flexibility. There were some variations in what different grantees considered appropriate and easy to implement depending on the community. For example:

- In one setting the jump rope activity was a hit, and very easy to do as it was part of the girls’ regular recreation.
- Meanwhile, in another setting, based in a low SES rural community, jump-roping wasn’t familiar to the girls nor was it easily accessible.

As another example:

- In one setting it was very easy to locate tree rings as a lumber company was located down the street from the program site
- Meanwhile, in another setting the rings had to be ordered, resulting in several send-backs to the company as the company sent enormous and unwieldy stumps.

As a third example, the lip gloss activity appealed to some but not all grantees due to: some sites having to target activities to both boys and girls, some girls perceiving the activity as “too girly” and wanting more complicated scientific activities, and some site managers feeling the activity was too messy to clean up.
The following extended excerpt is from one grantee’s report on their use of the SciGirls activities across multiple sites:

All of the sites were able to utilize the SciGirls en Español Activity Guide and DVD. Little Village Academy and Christopher House showed correlating video segments and scientist profiles before or after the teen mentors taught, enabling the students to make connections to the content and potential career fields. Douglas Park Youth Center selected additional activities from the SciGirls en Español Activity Guide to use during the rest of their summer camp program. Both Christian Fellowship Flock and McCormick Tribune YMCA have been able to incorporate SciGirls activities into their after school program this fall. The SciGirls en Español activities and DVD were able to provide a vehicle for Hispanic teens to become mentors to students and to help get students excited about doing science.

The students from Little Village, who were all female, were amazed that the teen mentors were able to speak Spanish and came from communities similar to theirs. [The] lead science teacher at Little Village, commented on how the students still continue to ask about the Museum and want to know if the teens will come back for additional programming. Cynthia has been able to use the DVD as a way to continue the conversation about science careers and Hispanic female role models. Students at the other sites reacted similarly to the hands-on science activities and to the teen mentors.

At the same time, the teens were impacted as well by their experiences. Everyday, the teens would debrief about the session; what worked, what did not work, teaching strategies to try out for the next day, and if the students were excited about the science. Often times, the debriefing sessions would lead to the teens discussing how they were seen as leaders by the students they taught, and they would make connections between themselves and the women featured on the SciGirls DVD as well as to other strong Hispanic leaders they know. At the end of the summer, the teen mentors asked for additional opportunities similar to Brilla La Ciencia because they wanted to continue facilitating science in schools and organizations. They spoke about realizing the impact they had on the students they worked with, and that in teaching science they were able to give back to the community while continuing to develop personally as leaders.

Few grantees encountered challenges in acquiring supplies suggested in the activities. The main challenge grantees faced in implementing activities involved grantees residing in vastly different, such as a desert environment where conducting water-based activities in ocean, river, or bog environments, for example was difficult to accommodate, or hot climates where the solar-oven activities proved challenging to show a difference between the two conditions.

How did grantees compare the SciGirls resources to other science resources?

Grantees tended to identify three aspects of the SciGirls resources that stood out for them compared to other science resources they've used. Most often they referred to the bilingual component, as in:

“Of course having the bilingual component is huge you don’t find that everywhere” and “It was hard to find materials in a bilingual format. It helped increase the girls’ scientific vocabulary, but it helped reinforce the linguistic component.”
Almost as frequently they pointed to the usability of the resources, particularly relating to their format, simplicity, flexibility, and use of everyday materials, as in:

“I think probably one of the best things about these resources is the format used, it’s straightforward and outlined well and very geared to the student so you can really just give it to the student and use it…we found we could take it straight it out of the book, make laminated copies in both English and Spanish, and we were good to go”.

Some grantees focused on the fact that the activities interested girls, hooked them in, and helped them relate what they learned to their own lives, as in:

“I guess it went more into detail and definitely got the intent to get girls thinking on a deeper level and how it related to things around them, so it took it a step further, how does it relate to me or something I'm interested in and like in my own background.”

Another grantee elaborated:

“I think this is the best initiative I have seen since I started working in US 5 years ago. I carry the program completely in Spanish, and the Scientists I invited to participate were all Latinas. Two of them talked to the girls about their work and their path to science in Spanish and the materials they brought to the girls were also in Spanish. Only one spoke English. The girls were very enthusiastic and participated in asking questions and making comments in Spanish. I think they really had a great experience and a valuable one, because the guest speakers talked about reaching goals the girls can also pursue. The girls were proud to know Latina women doing science, real role models.”

To what extent did grantees use the SciGirls en Español materials provided?

Grantees typically reported using all of the provided SciGirls materials, including regular use of the Icebreakers, DVDs, and Activity Guide. Most grantees described using a combination of English and Spanish versions of the materials depending on the audience targeted (e.g., parent vs. student) and the media used (e.g., DVD vs. Activity Guide).

About one-third of the grantees described relying fully or most heavily on the Spanish versions. Those using a combined approach, often through bilingual educators, described using the Spanish materials to key in on science terms associated with each activity, noting students lacked familiarity with specific science terms in Spanish.
To what extent did grantees feel they applied findings on engaging girls in science?

While grantees consistently praised the training and related SciGirls resources for raising their awareness about how girls learn and enjoy science they were less certain about the extent to which they actually applied specific findings when implementing their programs. Many grantees indicated that they couldn’t recall the strategies, or indicated that they were: “a little bit fuzzy, in the background of their thinking, not bold but there in a subtle way, or got lost to their own ways and process of working with girls.” In a few cases grantees that were involved in both SciGirls en Español and SciGirls en Familia indicated some confusion between The SciGirls Seven: Proven Strategies for Engaging Girls in STEM and the Seven Steps of scientific inquiry, indicating that both involve the number 7 so when they were thinking about applying educational strategies they defaulted to concentrating on the steps of scientific inquiry. Grantees involved in both the SciGirls en Español and SciGirls en Familia projects indicated that by having the benefit of a second training, in this case an online training, the information was clearer and they felt more prepared to take the strategies to heart and implement them with intent.

Among the SciGirls strategies featured, two most stood out for grantees: the fact that girls benefit from (i) collaboration (ii) and from relationships with role models and mentors. Those focusing on the collaborative strategy tended to be from organizations that also featured boys in their programs where competitive elements played a factor in group work, so they found themselves trying to be cognizant of this strategy in setting up the environment for girl participants. Those focusing on role models and mentors emphasized that they went into their project actively looking to find female volunteers, students, and scientists to ensure this strategy was addressed. A few grantees mentioned that they took to heart the strategy that girls are motivated by projects they find personally relevant and meaningful. They felt that the selection of activities put together by the SciGirls team took this into account, and that their job was to then help provide local context. Beyond these three strategies, however, grantees rarely discussed the other four strategies when describing their project activities or impacts.7

![Brochure from one grantee project describing the value of girls exploring science](http://www.pbs.org/teachers/scigirls/philosophy/)

7 Note that grantees involved in SciGirls en Español only (not also en Familia), would have only been exposed to 6 strategies. The project team reviewed the research and revised its strategies with the new TV series. Then for SciGirls en Familia, the team presented the new strategies titled The SciGirls Seven.

http://www.pbs.org/teachers/scigirls/philosophy/
3.3 Grantees’ project impacts, highlights, barriers and facilitating factors

 цель Looking back on their project, what did grantees identify as the main highlights?

Grantees mentioned a wide range of highlights, some related to specific events they conducted while others related to a process that developed over the course of the grant period, including:

- The initial excitement of the first session when the girls did a SciGirls activity (birds net), which infused science learning into a craft project groups might normally do as part of a regular troop activity.
- The culmination of student work and sense of rapport and accomplishment that came together at the end of the program.
- The pride cultivated in the girls over time as they learned about science and took on leadership opportunities.
- Bringing the SciGirls en Español opportunity and materials to girls in impoverished areas and watching the excitement and appreciation of the grantees travelling a long distance to bring this to them.
- Seeing families' transition from disinterred and even distrustful to avid SciGirls advocates.

Girls and their families participating in SciGirls camp activities

- Watching the girls open their minds to scientific inquiry and being able, with time, to not just play with lip gloss, but to also enjoy and investigate materials like owl pellets, something initially perceived to be disgusting.
- The mentoring and bonding that occurred between the female volunteer mentors and girls.
- The professional development that occurred with the volunteer staff in the program, seeing the need to mentor girls in STEM, and becoming an advocate.
- The fieldtrips to places that girls enrolled in the program would not otherwise have an opportunity to visit, such as the zoo and IMAX.
- Offering non-Spanish speaking girls an opportunity to learn Spanish and Spanish-speaking girls an opportunity to learn English.
The following excerpts are taken from two grantee journals, which together comprise 76 entries completed by the project staff that worked directly with students in local SciGirls projects. The journals were maintained to build a project record over time and to serve as a reference point for different staff working with the girls over time and in different settings. The entries show examples of some of the highlights the staff encountered in implementing the SciGirls activities with the girls:

- The kids enjoyed both activities. The ice breaker really caught their attention. It was a very fun activity even though it was very short. At the beginning of the activity the girls were very timid. They did not want to make the connections by themselves. Once they got the concept, they went to town! Each of the girls in the group made their own circuits with the light, the motor, or the buzzer depending on their preferences. One of the girls figured out that she could make two circuits with one battery and could push the switch to turn off the buzzer and turn on the motor.

- The kids had a blast with the dry ice. The gas inside the bubbles fascinated them for a long time and could have fascinated them even longer. These girls remarked that the solid ice changed directly to a gas. They also got very excited when we passed out the “helado” recipes. They had fun pouring and measuring all the ingredients for the ice cream. They said the ice cream tasted better than store bought ice cream. One of the girls really got into shaking the shoe box. She was dancing the “cha cha” while she shook it. The girls all made sure to take the recipes with them so they could make the ice cream at home and show their parents. Also one girl took extra recipes to give to her Girl Scout troop.

- The children at the community center were very enthusiastic about learning of fossils. They understood the concept of the newspaper activity and they caught on very well. Before leaving the community center a little girl that I had particularly helped unintentionally more than the rest ran and hugged me. It feels great to have helped them and it feels that much more great to have them show their appreciation.

Did grantees readily track, report, and reflect on project impacts?
Grantees’ final reports tended to focus more on their programmatic details than on their impacts. About one-third of the grantees reported that they conducted some type of evaluation, using either surveys or interviews. The reports in these cases do not describe specific results, but offer sample quotes or a general summary of grantees’ observations.

Other grantees described anecdotal evidence of project outcomes. These grantees described their project outcomes in positive terms, with no negative unintended impacts cited. Several identified unintended positive effects, however. In some cases grantees discovered that their project cultivated teamwork, leadership, and proficiency in STEM teaching among project staff, volunteers or teen mentors. In other cases, grantees observed a multiplier effect that went beyond the participating girls themselves and extended to the sisters, cousins, and mothers who accompanied grantees at the SciGirls en Español session.

Two examples of how grantees described their project impacts are provided below.
Example 1
The SciGirls curriculum was an invaluable component of the camp and the education that the girls got this summer in science. Through the curriculum, the girls learned how to conduct experiments including how to make and properly test a hypothesis, track and compare their data, and reach a scientific conclusion based upon the data. The girls will be able to use these important research and analysis skills in math and science classes in school. The SciGirls experiments also taught the girls organization, note taking and problem solving skills that will benefit them in all of their classes and in their personal life. The girls thoroughly enjoyed the fun hands-on activities.

Example 2
SciGirls en Español has made a positive impact on the Laredo community. With the support of Twin Cities Public Television, we were able to bring exciting, engaging, consistent science activities to Community Centers in almost exclusively Spanish speaking areas where the median household income levels are $13,000 per year. The program was a huge success judging by feedback from both children and parents. The parents whom we interviewed at the end of the program were struck by the fact that we would take the time to come to their communities to work with their children in educational programming, and they appreciated the focus on the importance of education and of stimulating the mind. The Spanish language resources were extremely valuable to our program. We were also pleasantly surprised to find many additional benefits to the Museum.

What factors did grantees feel facilitated or helped their projects to succeed?
Grantees reflected on a number of factors that they felt facilitated or helped their projects to succeed. The main factors they touched on are summarized below, under the broader categories of: (i) outings and final culminating program, (ii) community network, (iii) organizational support/mission, and (iv) project staff rapport/approach. Specific examples in each case included:

(i) Outings and final culminating program
- Culminating end of program presentation – where public and families, partners and program staff and board come together to see what girls have been doing and have accomplished.
- Fieldtrips – where girls were exposed to community events they otherwise would not have an opportunity to experience and relate to SciGirls.

(ii) Community network/connections
- Partner collaborations – to fill in missing expertise, supplies, role modeling through visiting expertise
- Volunteer base - particularly young volunteers the girls looked up to and could relate to.
- Access to past or current comparable programs – to draw on what worked with other girls.
- Finding hub of community buzz – to get the word out about the program.

(iii) Organizational support/mission
- Organization mission is STEM or girl empowerment focused - so it's part of the institutional culture
- Starting preparations early – as in end of school year if program is to start in the fall.
- Having organization access to multiple program sites – so staff could regularly meet, cross-reference and troubleshoot.
- Support of and buy-in from project manager - serves as a good sounding board, helps problem solve.
(iv) Staff rapport/approach
- Bilingual facilitators – fluent, had a blend of experiences in community culture from which the girls resided but not essential to have STEM background as materials were easy to use, flexible, and clear.
- Positive attitude and thinking – to engender enthusiasm and the expectation that although there may be resistance or inertia to initial program ideas, having a positive plan to address these barriers was key.
- Creativity – incorporating what the organization does best with the SciGirls activities, as in using troop related arts and crafts resources and techniques into the science activities.
- Open mind/having fun with it – being flexible when things don’t go according to plan and then seeing how the activities connect with the girls where the girls take you.

What challenges/barriers did grantees face in accomplishing their project goals?
Grantees were asked to reflect on the main challenges or barriers they faced in accomplishing their project goals. The main themes they touched on are summarized below, under the broader categories of: (i) working with/communicating with families, (ii) logistical/time constraints, (iii) working with girls, (iv) working with community organizations, and (vi) adapting activities for use in low SES communities. Specific examples in each case follow.

(i) Working/communicating with families
- Convincing parents and students this was worthwhile and would have a long term effect.
- Gaining trust so parents/guardians would be comfortable leaving girls for extended periods/overnight, on field trips.
- Making sure parents/guardians had information they needed to know available in Spanish on ongoing basis to ensure participation in fieldtrips and other activities.
- Accommodating girls’ siblings, parents, and friends who attend the SciGirls programs – need to factor this in and the cost of babysitters.
- Parents not understanding what SciGirls stands for due to language barrier and lack of a translation
- Negotiating with boys and their families why this program is for girls.

(ii) Logistical/time constraints
- Transportation for girls – some families particularly women, don’t drive, issues with drivers licenses, required providing transportation and using bilingual educators to participate and interface with parents/guardians.
- Transportation for staff/volunteers – outreach in communities often involved travelling long distances and cost was incurred by staff/volunteers.
- Time constraints – fitting all the steps of each activity within an hour and a half session including settling in time, snack, and some pressures from families to have the girls home by a certain time
- Troubleshooting access to and use of materials in settings not conducive to those featured in the SciGirls videos and activities.

(iii) Working with girls
- Motivating girls coming in with negative attitude, unmotivated.
- Challenge of working with broad range of ages to meet goal of being inclusive to girls in the community.
- Drop-out due to transient community, sports season.
(iv) Working with community organizations

- Working with community centers – scheduling and facility use logistics, and lack of flexibility
- Lack of access to facilities in low SES communities.

(v) Adapting activities for use in low SES communities

In this case grantees discussed difficulties they experience translating the activities, culturally, for use in low SES communities, such as the bogs or jump rope activity where these weren't part of the girls' culture, or in the case of makeup, which is too expensive an item to feature in an activity. Where very often grantees felt they didn't need to adapt any of the activities, in these cases, grantees said they went a different direction, as illustrated in the following example:

*For the lip-gloss activity…*the kids don’t have money for makeup so it is seen as what the wealthy people in town do, so that one we adjusted and did ice cream so we tried to bring it to something they were familiar with on a day to day basis….I think after the first couple of times out there we were able to tell…Like the solar oven it is so hot so marshmallow gets so hot it was the same either way so something’s aren’t universal but it is okay it gives us a basis to give explanations…and then we say there is no diff with scientists and some of them before they started expected they would both melt.*

The following excerpts are taken from the two journals, cited on page 45, that were completed by project staff working directly with students in local SciGirls projects. The excerpts from these four separate examples illustrate some of the logistical, material, and girl-related challenges the staff encountered in implementing the SciGirls activities in their local settings:

- *It was great to see the kids eager to learn or see what they were going to do. We had the parents there too and they were also wondering what was going to happen. There was no icebreaker. This visit was the last to Rio Bravo. Throughout our visit I noticed that all the kids were frustrated with the activities at first. They would say they couldn’t do it. In my groups I would tell the kids let’s calm down and think how to improve it. I would ask them about the activity, the ice breaker, and how we could fix the problem they were having through questions. I would let the kids know it’s not a race and it’s trial and error, that that is how scientists work. From all my visits the kids would ask questions with themselves and fix however they thought was right to achieve their goals.*

- *Today at el Cenizo there were a lot of girls. Which worried me because at the previous outreach in Bio Bravo the girls did not seem very interested in our activities. Our activity dealt with electric current. When it came time to create a closed circuit by holding hands and a special ball, which all the girls and boys absolutely loved. The children met the main activity with the same enthusiasm and I believe it was a success.*

- *The children were a bit apprehensive about playing with the snails at first, which had me a little worried about the whole investigation. Soon my worries were dismissed when I saw the children take very kindly to their snails. The children were very fascinated by the slimy critters. After we were done observing the snails we began an investigation into what they preferred to eat. One of my children decided to place 8 different types of foot along the edge of a plate and then place the snail in the middle which worked out well to see what the snail enjoyed most, which turned out to be bread. It all went well, and was a successful investigation.*
The icebreaker wasn’t too great today. The water was only so hot, and the time it took to get cups of water to all the children was quite time consuming. But the main experiment was fun and my group worked together and communicated effectively. I asked the girls where on our cone shaped solar oven the smore should be placed and they said at the bottom of the cone. Because they noticed that there was more light reflected on the table where the opening of the cone was. This group did an excellent job, and they were proud of their solar oven construction.

### 3.4 Grantees’ sustainable/lasting project impacts

**Did the grantee projects indicate sustainability/extended influences beyond the grant?**
Most grantees identified at least one way that their organization or a partner organization continued to benefit from or use the *SciGirls en Español* materials, training, or project-specific programming after the life of the grant, as follows:

- Most often grantees described efforts to continue to use the *SciGirls en Español* materials in subsequent programs.
- Some grantees described efforts to disseminate the *SciGirls en Español* materials and strategies, such as distributing the Activity Guides and DVDs to local educators or presenting information about *SciGirls en Español* and their particular project at, for example, an annual science teachers’ conference.
- Finally, a few grantees described efforts to spearhead training, such as training local teachers or teen mentors to use *SciGirls en Español* materials in similar settings.

**What longer term impacts did the grantee projects have on the grantee’s organization, girls, and staff/volunteers that participated?**
Grantees described lasting impacts from their projects on the girls and families that were served, the staff/volunteers that participated, and the hosting organizations. The major impacts outlined in each area are briefly summarized below.

(i) Girls and families served
While none of the grantees provided information on their project’s long term measurable impacts, some did include evaluation forms at the conclusions of their programs. These grantees consistently indicated positive reactions from girls and their parents. In terms of longer term impact, several months later in most cases, the grantees observed that many participating girls and families:

- Participated in other STEM programs, recalled *SciGirls* highlights, expressed interest in participating again, and praised the program structure, routine, and hands-on activities.
- Talked about new science-related projects or activities they were working on, such as a Girl Scout badge work or a science fair entry they are doing, and asked for help or input from the *SciGirls* team members.
- Made repeat visits to STEM events and activities at informal science centers after being provided discounted or free memberships.
- Re-enrolled in *SciGirls en Familia* projects and were positive and enthusiastic role models to new program participants.
(ii) Staff/volunteers
In this case grantees pointed to shifts they observed in staff and/or volunteers’ awareness, skill, and advocacy as follows:

- More easily retained for new programs with a similar focus – since their buy-in was already there, they were already trained, and could start from the ground running. The positive benefits from the program seem to have played a role in staff retention and lower turnover, which could be attributed to, for some grantees, the opportunity to move into SciGirls en Familia grant.
- Supportive advocates for doing more STEM projects focused on girls, for looking out for similar opportunities, and for helping with recruitment and enrollment.
- More involved in cultivating leadership among staff and empowering staff to take on their own programs, troops, and grant writing.
- Instrumental in altering staff and others’ perceptions of the host organization’s mission relating to STEM, such that for example, an organization like Girl Scouts is more than camping, cookies and crafts.
- Increasing staff comfort with STEM content, as one staff recalled: I wasn’t comfortable with especially math as a kid and wondered how someone like me could teach who doesn’t understand it but I feel so much more comfortable and it took me back to the scientific method and the whole science fair thing.
- More aware of the need for educating girls in STEM and providing them with opportunities to engage with STEM.
- More fluid in bilingual skills and comfortable communicating with girls and families in Spanish.
- More skilled in using technology and looking for opportunities to use media in youth programs.

(iii) Grantee organization
In this case grantees observed shifts at an institutional level, as in:

- Strengthened institutional desire to diversify afterschool programs and to provide more materials and instruction in Spanish.
- Increased institutional focus on developing girl-only programs.
- Strengthened institutional focus on STEM - helped build foundation and desire for increased programming as part of institutional mission.
- Enhanced staff skill set in collaborating with partner organizations and learning how to nurture relationships to foster in-kind contributions and other support to meet the needs of poor communities.
- Extended staff’s use of SciGirls materials within and outside the organization – through lending books, videos and activities to teachers, educators, and troop leaders.

To what extent did grantees use SciGirls materials after the grant period ended?
Nearly all of the grantees identified one or more ways that the SciGirls materials had been used in the months since the grant period ended. At a minimum, the resources were available in a resource library or office setting for use by other staff members at the grantee organization. Most grantees also named specific examples of how the resources had been adapted for use in various other settings including at booths at local community festivals or events, in camps, afterschool programs. As explained by one grantee:

Yes, I personally just used one the of activities a few weeks ago, I made the goop about the glaciers a few weeks ago, I brought enough for the girls so I had them make 4 types of goop and then after we made a batch we tried adding more or less borax
and wrote it on the board and made the changes and using the ingredients, I think they had a good understanding of the scientific process. We used a completely different recipe, they actually like that recipe more than the usual recipe. I know (another staff) working with our other STEM programs she uses them as well. And like (another staff) was going to get in the summer….girls camps and we were ready to pull out the curriculum. So the supplies and everything have been used over and over again.

Did grantees have suggestions for enhancing the sustainability of their projects?
Grantees provided a variety of suggestions for helping projects to ensure sustainable impacts over time beyond the end of the grant period. These included:

- Foster opportunities for ongoing collaboration between grantee projects so staff can share resources and ideas, help troubleshoot choose of activities for local regions depending on for example it is a river, ocean, or bog community.
- Develop a Ning site to alert you when there is new information, so you are reminded to check it for updates or discussion with other grantees.
- Provide ongoing support in Spanish that can be accessed by project staff, volunteers, and parents, and make template forms available in Spanish for easy download.
- Provide pamphlets or other resources for showing how SciGirls can be used long-term, in the classroom, at home, and so forth, beyond what projects do in their grantee projects.
- Have a place where girls can go online and share their SciGirls stories and experiences. Connect what is done at the local level with what girls are doing in other locations around the country to broaden their frame of reference and see other girls like themselves.
- Periodically revise and update the SciGirls activity books with new material, rather like the Girl Scouts trade books do to offer fresh material and content.
- Partner with national organizations that are focused on girl empowerment and/or STEM education that have local chapters or programs to create additional synergy, help with overall organization across sites, and again cross-sharing of resources and ideas (e.g., American Chemical Society, Girl Scouts of the USA).
- Make the project a community-ownership based model by training not only educators but parents and adults invested in the girls’ education and having them come up with new ideas and materials.
- Provide technical assistance to help grantees conduct pre and post evaluations of girls, family members, staff, and volunteers to help refine the program over time and assess final outcomes.
Discussion

Funded by the NSF in 2008, the SciGirls en Español project was designed to expand the SciGirls outreach programming to afford girls in Hispanic communities the opportunity to receive hands-on science encouragement and science guidance given the chronic underrepresentation of Hispanic women in STEM fields. A second priority of the project was communicating what NSF-funded research has revealed about engaging girls in STEM subjects, and what strategies work best. These concepts are embedded in all the SciGirls outreach efforts. SciGirls en Español is based on the premise that Hispanic girls and women can succeed in and contribute to STEM fields, but many never realize this potential. With the growing importance of science and technological literacy, and with the growing population of Hispanic Americans, the position of the SciGirls team is that it is imperative to spark and strengthen Hispanic girls' engagement, interest, and confidence in STEM subjects in middle school – before they make the critical choices in high school that will either open or close doors to postsecondary STEM studies and careers.

Initially, our evaluation asked as a matter of context, to what extent is SciGirls en Español unique in this regard? We found that while science enrichment girls-only programs exist, such as Girlstart, Zoey's Room, Sally Ride Science Camps, and Science ALIVE, there are relatively few media and outreach based programs designed to cultivate STEM interest and competencies among Hispanic girls. A search of the NSF website of recent or current programs targeting, or even prominently serving, female youth of Hispanic origin, revealed very few programs. The deliverables in these cases include conferences, extension services, research studies, toolkits, and workshops. None of these initiatives appear to involve the implementation of community based grantee programs, nor the use of established multimedia programming directed at delivering hands-on science encouragement and career guidance to girls in their communities.

Given this current dearth of programs and related evaluation work, the findings from SciGirls en Español could be of value to others working to design informal science education programs directed at Hispanic girls living in Spanish speaking or bilingual communities.

Our evaluation of SciGirls en Español focused on the project's three main phases: 1) the grantee award process, 2) the grantee training program, and 3) the implementation of the grantee projects. Our evaluation methodology relied on a mixed methods approach that included three general components: secondary data review and analysis, surveys of grantees following the tpt training, and follow-up surveys and telephone interviews with grantees several months following the completion of their projects. The evaluation findings are summarized below, following these three phases.

Part 1: The Grantee Award Process

What types of grantee organizations sought SciGirls en Español awards? About half of the grantee organizations were informal science organizations (science centers or museums), while the rest were schools (elementary or middle) or community organizations serving girls (Girl Scouts or Girls Inc.). Two grantees were located in Texas, while the other 7 grantees were located in Arizona, New Mexico, Wisconsin, Minnesota, Illinois, Louisiana, and Tennessee.
How did grantees learn of the SciGirls grant opportunity? Grantees most often found out about the SciGirls grant opportunity through a notice sent to them via email, either through an eblast from a school district, the ASTEC listerv, or a regional or state based organization focused on girls’ leadership education.

Did grantees have prior experience with DragonflyTV/SciGirls materials? Prior to participating in SciGirls en Español, few grantees had used or even heard of the DragonflyTV or SciGirls television programming, activities or ancillary resources, an indication that tpt effectively reached applicants outside the outreach network previously established for these programs. Those who indicated prior familiarity with DragonflyTV recalled either watching the television program at home with a child or said that the videos were available in their organization’s resource library and referred to on occasion by staff members to help inform brainstorming of activities.

Did grantees have prior experience in STEM, serving girls and Spanish speaking audiences? Only one organization was primarily focused on STEM education among Spanish-speaking audiences, a bilingual education charter school with a mission of educating students in STEM. More often the organizations focused on (i) the development of girls, as in Girl Scouts or Girls Inc, or (ii) STEM education, as in science centers or other informal science education organizations with STEM education as a secondary if not primary focus.

Those involved in STEM education typically directed or worked in after-school enrichment programs, in-school science programs, or summer camps. Those involved in girls’ development took a broad based approach to empowering girls to consider various career and pursue leadership opportunities, of which fostering girls interest in and knowledge of STEM content and careers was a part, through for example girl scout troop science badge work or Girls Inc. mentoring programs. Those involved in outreach to Spanish-speaking audiences most often were brought into the SciGirls en Español projects because they were bilingual in English and Spanish and/or worked in the specific communities targeted by the SciGirls en Español project. Some were already or previously employed by the organization implementing the grantee projects, others were specifically brought into the work on the SciGirls project.

Part 2: The Grantee Training Program

After awarding grantees their grants, tpt provided training to help grantees plan and implement their projects. All training workshops were led by the same tpt trainer and held as day long events held at local venues. At the time of the grantee training program, the 42 participants that completed evaluation forms found the most enjoyable aspect to be the hands-on activities, followed by the DVD, and the SciGirls en Español manual. Grantees agreed that the training activities and handouts were useful training tools and that the trainer was effective, well organized, and knowledgeable of the SciGirls en Español curriculum. Grantees were divided about the length of the training, with some indicating the day-long schedule was too long while others felt it was too short. While the majority did not recommend adding or eliminating any topics from the agenda, a few suggested eliminating an activity to shorten the training day, while others desired even more hands-on activities. Several grantees suggested the schedule stay the same, but prioritize certain elements, such as: the use of Spanish vocabulary, tips on how to apply the inquiry steps, or examples of how other organizations are implementing SciGirls en Español. Finally, some grantees offered suggestions for improving the training, such as: having the scientist profiles and data templates in Spanish, reviewing all (rather than just some) of the activities, and providing supplemental training sessions or evaluation support.
During the follow-up interviews conducted approximately 6-9 months after grantees completed their projects, the 13 grantees that provided feedback on the training overwhelmingly agreed that the training was well organized and run, attributing this to trainer's use of a clear agenda, evenly paced schedule, and thoughtful format. Most grantees also reflected that all of their project staff who needed training attended the in-person training provided by tpt. For those unable to attend, the grantees felt it worked well to subsequently meet with them and share videotapes of the training or notes. Several grantees indicated that they would have liked to have extended the training opportunity to parents/guardians to foster their understanding of and investment in the SciGirls goals. Recognizing the scheduling and logistical constraints that need to be factored in given families' work, transportation, and care-taking commitments and challenges, grantees readily offered up suggestions for addressing these potential barriers to attendance.

When asked to reflect on what stood out about the training, grantees most often chose to praise the facilitator, particularly her bilingual fluency, knowledge, and enthusiasm. Others pointed to an inherent value and validation they felt that came with receiving a personal visit by a trainer from tpt. Several grantees also were quick to recall the hands-on activities, the opportunity to experience SciGirls as a participant, the group discussions, and the time spent on understanding the purpose of the activities and the inquiry steps. All were quick to agree that the training raised their awareness of how girls learn and enjoy science. For some it was a process of learning completely new information and strategies, for others it was more a matter of reinforcing their own prior assumptions or understanding of how girls best learn about STEM.

The following bullets summarize the feedback provided by the 42 participants that completed a survey immediately following the event and the 13 grantees that reflected on the event 6-9 months later.

**Immediately following the training**

- **What did the grantees identify as the most enjoyable part of the training?** Grantees overwhelmingly mentioned the hands-on activities (62%), followed by The DVD (19%), and the activity manual (14%). Several grantees (10%) found the presenter to be the most enjoyable part of the training. Some (7%) liked the discussion sessions and a few found value in the inquiry process the training was based upon (5%). A few others pointed to the scientist’ biographies or training format as most enjoyable (2%).

- **What did grantees identify as the least enjoyable part of the training?** No one theme stood out among grantees’ responses, and one-fifth (19%) indicated the entire training was enjoyable. Several grantees (17%) suggested the length of the training could be condensed while a few others (12%) felt there wasn't enough time to cover everything they wanted cover during the training or indicated that the training could be more Spanish driven (5%). A few final grantees (2% each) felt it was unnecessary to go through the manual, preferred to be more active during the training, or were disinterested in science and therefore had a difficult time staying engaged. Most of the remaining grantees left the question blank (17%) or said “no comment” (14%).

- **How did grantees rate the usefulness of the training activities and handouts?** Roughly three-quarters of the grantees found the activities (74%) and handouts (69%) to be extremely useful.

- **How did grantees rate the trainer’s effectiveness, organization and knowledge?** Grantees found the trainer to be very knowledgeable, very effective, and well organized. Using a scale of 1 (lowest rating) to 5 (highest rating) the median ratings in each case were 5.0.

- **What topics did grantees suggest could be eliminated from the training?** More than half the grantees (57%) suggested that nothing be eliminated from the training and one-fifth (21%) left the question blank.
blank. A few grantees (7%) suggested eliminating an activity while a few others (5%) felt the training should be shortened or suggested trying to make time for more hands-on activities (5%).

**What topics did grantees suggest could be added to the training?** The majority of grantees suggested that nothing be added (31%) or left the question blank (29%). Several suggested the training add more activities (10%) or provide examples of how other organizations are implementing the *SciGirls en Español* program (7%). A few other grantees (5% each) suggested incorporating more Spanish vocabulary into the training or providing tips on how to apply the inquiry steps.

**What final comments and suggestions did grantees offer for improving the training?** Several grantees provided suggestions for improving the training, including: providing the scientist profiles and data templates in Spanish, reviewing all rather than just some of the activities, and having additional training sessions and evaluation support available to grantees. Other grantees stated their excitement to utilize the program or extended general praise for the training and trainer.

**6-9 month reflections**

**What did grantees feel stood out about the training in retrospect?** During the follow-up interviews conducted approximately 6-9 months after grantees completed their projects, grantees were asked to reflect on what stood out about the training - good, bad, or otherwise. Grantees most often chose to praise the facilitator, with many appreciating her bilingual fluency and that she was also, as variously described by different grantees: knowledgeable, informative, enthusiastic, and helpful. Others pointed to an inherent value and validation they felt came with receiving a personal visit by a trainer from *tpt*, along with the trainer in this case being particularly skillful at developing a fast rapport with attendees. Other aspects that stood out for grantees were the hands-on activities and opportunity to experience *SciGirls* as a girl in their own program would. Grantees also appreciated the opportunity to discuss the activities and spend time on why the activities were being implemented and the role of the inquiry steps in the girls’ learning from *SciGirls*.

**How well organized and run did the grantees find the training?** Grantees overwhelmingly agreed that the training was well organized and run. Despite the months that had passed since the training, grantees were quick to recall the trainer's use of a clear agenda, evenly paced schedule, and thoughtful format.

**Did grantees feel that the key project staff who needed the training attended?** The majority of grantees felt that all of their project staff who needed training attended the in-person training provided by *tpt* at each grantee site. For those unable to attend, the grantees cited: lack of project staff in place before the project officially started, key project staff traveling on the day of the training, and the training be held during the summer months. To accommodate those who missed the training, grantees generally felt they were able to use what they learned to bring these individuals up to speed, typically by meeting with them later and sharing videotapes of the training or notes.

Several grantees indicated that they would have liked to have extended the training opportunity to parents/guardians, as it would have helped: foster their understanding of the *SciGirls* program goals, enhance their appreciation of the need to engage girls in STEM, and “allow them to feel part of it” as a few grantees observed. However these grantees also qualified that including parents meant additional scheduling and logistical constraints that need to be factored in given work, transportation, and care-
taking issues. To help address these issues grantees suggested spreading the training out over a two-day period and offering child-care while others thought it might be more feasible to just offer a demonstration and reception session tailored to families and the community later in the day.

Did grantees feel the training prepared them to implement their projects? Grantees overwhelmingly agreed that the training prepared them to implement their SciGirls projects. Most often they attributed their readiness to three aspects of the training: the flexibility and user-friendliness of the resources, the training’s focus on the inquiry process, and the trainer’s approach of having grantees pretend to be the girls targeted by their program. In particular:

- With respect to the resources, grantees were consistently positive about the flexibility of the resources and supporting supplies and the extent to which they could be adapted, expanded, and substituted to fit the circumstances of the program setting and the needs and interests of the girls participating.
- With respect to the inquiry process, grantees appreciated that the training emphasized that they need not be invested in the outcome of the activity so that if a session doesn’t go according to “plan” this is not only acceptable but sometimes preferable.
- Finally, many grantees reflected that they found considerable value in the trainer having them pretend to be the girls they would be teaching so they could see the activities through the girls’ perspective, and do so in a hands-on capacity.

Did grantees feel the training adequately addressed the needs of Spanish speaking audiences? Grantees generally felt the SciGirls en Español training adequately addressed the needs of Spanish-speaking audiences, particularly given the time constraints of a one-day training and the vast amount of material to be covered. Those participating in both SciGirls en Español and SciGirls en Familia made a point of praising the fact that the trainer who presented the in-person SciGirls en Español training was fluent in Spanish and bilingual, and appreciated her ability to move fluidly back and forth between English and Spanish. Many of these grantees contrasted the in-person training with the online Ning training used for the subsequent SciGirls en Familia grant, observing that such a fluid bilingual flow was largely missing in the online training, and would have benefited by the Spanish-speaking trainer of SciGirls en Español playing a more active role, if not leading the webinar, blogs, and related online activities.

At the same time, some of these grantees also qualified that the online training provided for the SciGirls en Familia program was advantageous in some ways, as the training could go more in-depth into illustrating and discussing strategies for engaging girls from various Hispanic communities. Looking at the pros and cons, most felt the in-person SciGirls en Español training accomplished all it could given the allotted time. Some however indicated they would have appreciated having access to strategies and case studies for dealing with some of the language and cultural issues they faced in their projects, such as: a) helping to get buy-in and commitment from Spanish speaking families, 2) finding and getting buy-in from local organizations capable of hosting SciGirls programs, such as churches, community centers, and events where families gather, and 3) dealing with logistical and social tensions that can arise when working with bilingual, English, and Spanish dominant girl audiences simultaneously.

Did grantees feel the training raised their awareness of how girls learn and enjoy science? Grantees consistently agreed that the training raised their awareness of how girls learn and enjoy science. When asked to reflect on these findings and the specific SciGirls strategies they had learned
about for engaging girls in STEM, grantees reflected that the training either presented them with completely new information as they had little prior experience working with girls in STEM education, or that the information reinforced their own prior assumptions or understandings about girls learn STEM.

What suggestions did grantees have for improving future trainings? Grantees' post-project suggestions for improving future trainings were similar to those provided immediately following the training. Few focused on substantive changes, instead their suggestions mostly related to scheduling, logistics, and the inclusion of additional Spanish “templates” or other follow-up resources for starting up their programs. Their suggestions touched on scheduling and other logistics as opposed to the content of the training, and included: 1) Supplementing the in-person training with online training for more in-depth analysis and sharing of ideas and issues across grantee programs; 2) Scheduling the training date during months that school/work is in session; 3) Including even more information on working with Spanish-speaking audiences and/or including a section on bilingual learning and teaching processes; 4) opening the program to parents and promoting it accordingly; 5) Splitting the schedule from a 1-day training into a 2-day period to reduce density of learning, and/or offering a one-day training on 2 different days for those unable to attend one of the dates. In addition, some grantees, particularly those who lacked direct and ongoing access to Spanish-speaking staff prior to launching their projects, suggested that tpt provided a wider selection of project template materials that grantees could adapt in their programs, such as registration forms, liability and medical release forms, and letters home about project expectations, fieldtrip dress code and dates.

Part 3: The Implementation and Impacts of the Grantee Projects

This section describes the range and variety of the 9 grantee projects and highlights the extent to which grantees’ final project activities reflected their original expectations. This aspect of the evaluation relied on secondary data sources including: the grant proposals submitted to the NSF; the RFP on which the proposal was based; the training agenda; the grantee proposals; the grantee final reports, photographs and examples of grantee project activities provided by the grantee organizations, the SciGirls en Español activity guides and DVDs, and any project evaluations conducted by the grantees. In addition, we sought grantees’ longer term reflections on their grantee project via an online survey and/or the telephone interviews.

As in Parts 1-2, we sought a range of viewpoints on the question by seeking feedback from at least 2 different representatives from each grantee project. In this case though, grantees were asked to reflect on: the grantee training program, the implementation of their projects, their use of SciGirls en Español resources, how they measured and documented project outcomes and longer term influences of their projects, and their perceptions of the range of factors that facilitated or served as barriers/challenges to achieving the project’s designated goals.

About how many girls were served by the grantee program and were initial expectations reached? Approximately 700 grantees were served by the grantee program overall. Prior to commencing their projects, grantees on average expected to target approximately 80 girls, with individual grantees expecting to serve as few as 15 girls to as many as 260. About half of the grantees exceeded their projected number of grantees, while the other half generally met their expected count.
To what extent did grantee projects end up serving girls of Hispanic origin? Prior to commencing their projects, grantees on average expected that 87% of the girls served by their SciGirls en Español projects would be of Hispanic origin, with individual project estimates ranging as low as 50% to as high as 100%. Although not all grantees’ reported final numbers at the conclusion of their projects, most of the grantees’ attendance reports, which included a breakdown of participant race/ethnicity, approximated their initial projections.

In retrospect, did grantees feel their project reached the target audiences, and in particular the Spanish speaking audiences they intended to reach? Grantees generally felt they reached the target audiences they originally set out to reach. Some grantees qualified their impacts in this area, noting that they: did not reach as many girls as intended; planned to attract a higher percentage of girls less science attentive or interested in science; had envisioned finding a more conducive place in the local community to meet with girls on an ongoing basis; and/or had difficulty sustaining a core number of grantees over the course of the program and convincing the parents of the value of consistent attendance over time. In many of these cases the grantees felt that earlier and better communication with the girls families could have played a role in reducing these challenges as the families were involved in many religious events during the weeks, held traditional views that women are supposed to stay in the house, didn’t fully comprehend what SciGirls represented given that lack of translation for the name. Grantees who were able to initiate parent communication early on and manage this on an ongoing basis by inviting them to the programs, providing letters and take home materials in Spanish found that they became advocates for SciGirls and helped spread the word to other families.

How may project staff were dedicated to the grantee projects? The grantees identified an average of 4 key personnel for their projects with a low of 3 to a high of 5 personnel named by individual projects, indicating general consistency among projects as to the number of primary persons taking a leadership or coordination role on the projects.

To what extent did grantees work with the partners they initially named? Most grantees ended up working with the same partners they named in their grants to tpt. Most worked with 2 or more community partners. The most frequent choice of partners included: community centers, elementary schools, sororities, tutoring programs, mentorship programs, youth centers, churches, government agencies, universities, theaters, science centers, museums, zoos, and farms. About one-third of the grantees added new partners not named in their grants, most often local science centers or museums.

In what settings did grantees most often implement their projects? Most grantees planned and ultimately implemented their SciGirls en Español projects within summer camps or after-school/weekend programs, including science clubs and Girl Scout troops. Grantees’ final choice of project setting deviated little from their initial expectations.

What programmatic elements or strategies did individual grantees bring to their projects above and beyond what was featured in SciGirls en Español? Grantees described a variety of elements they brought to their projects. Most often they included the use of add-on events such as: guest speakers, field trips, student presentations, career events, parent receptions and Girl Scouts events such as the traditional investiture ceremony, badge-work, and council sponsored activities. Some grantees described specific strategies used in their projects to increase attendance and programmatic investment, including: involving female teen or college mentors on an ongoing basis, including boys in the participant mix, and encouraging friends and families to attend to help address transportation problems.
To what extent did participant attrition play a role in the viability of grantee projects? High levels of participation were found across most programs, regardless of program type. There was little attrition, and only occasional absences reported due to sickness or family emergencies. All but one program offered 100% free participation, with one program offering 50% free participation.

Did the configuration and duration of grantees’ projects fall in line with initial expectations? Some grantees designed their projects, and project goals, specifically around the SciGirls en Español offerings, while others implemented projects within programs that also met broader goals, for example, addressing girl empowerment, leadership, and STEM education. The length of grantees’ programs closely reflected initial expectations, with summer camps most often comprising month-long sessions and after-school programs comprising weekly or bi-weekly meetings held over a 2 to 6 month period.

Was the allocated budget realistic and reasonable to accomplish grantees’ project goals? Grantees indicated a recurring “there is never enough budget” sentiment yet acknowledged that they were generally able to accomplish what they needed to. Their main desires would be for funds to help cover transportation, more hands on activities, take-home materials the girls could share with their family members, and fieldtrips. They also suggested seeking more in-kind support and donations from surrounding organizations or organizations that serve the community, like from local snack companies, or lumber companies.

To what extent did the grantees feel they were able to make good use of the SciGirls resources? All of the grantees felt they were able to make good use of the SciGirls resources. The videos were often but not always used. Those who didn’t use them indicated one of three factors: 1) encountering challenges in having access to the needed technology available for showing them; 2) having a preference for getting straight to the hands-on activities given time constraints and project priorities; and/or 3) receiving feedback from the participating girls after seeing the initial videos and thinking that the girls featured in the video not look like them and that a straight translation to Spanish wasn’t as compelling as girls speaking Spanish.

The activities were used in all the grantee programs. Here again, grantees pointed to their user-friendliness and flexibility. There were some variations in what different grantees considered appropriate and easy to implement depending on the community. In one setting the jump rope activity was a hit, and very easy to do as it was part of the girls’ regular recreation; meanwhile in another community, a low SES rural community, jump-roping wasn’t familiar to the girls nor was it easily accessible. As another example, in one setting it was very easy to locate tree rings as a lumber company was located down the street from the program site, while in another setting the rings had to be ordered, resulting in several send-backs to the company as the company sent enormous and unwieldy stumps. As a third example, the lip gloss activity appealed to some but not all grantees due to: some sites needing to target activities to both boys and girls, and because some girls saw the activity as being “too girly” and wanted more complicated scientific activities, and some site managers feeling the activity was too messy to clean up.

Few grantees encountered challenges in acquiring supplies suggested in the activities. The main challenge grantees faced in implementing activities involved grantees residing in vastly different, such as a desert environment where conducting water-based activities in ocean, river, or bog environments, for example was difficult to accommodate, or hot climates where the solar-oven activities proved challenging to show a difference between the two conditions.
How did grantees compare the *SciGirls* resources to other science resources?
Grantees tended to identify three aspects of the *SciGirls* resources that stood out for them compared to other science resources they've used. Most often they referred to the bilingual component, as in "Of course having the bilingual component is huge you don't find that everywhere" and "It has hard to find materials in a bilingual format. It helped increase the girls' scientific vocabulary, but it helped reinforce the linguistic component." Almost as frequently they pointed to the usability of the resources, particularly relating to their format, simplicity, flexibility, and use of everyday materials. Some grantees focused on the fact that the activities interested girls, hooked them in, and helped them relate what they learned to their own lives.

To what extent did grantees use the *SciGirls en Español* materials they were provided? Grantees typically reported using all of the provided *SciGirls* materials, including regular use of the Icebreakers, DVDs, and Activity Guide. Most grantees described using a combination of English and Spanish versions of the materials depending on the audience targeted (e.g., parent vs. student) and the media used (e.g., DVD vs. Activity Guide). About one-third of the grantees described relying fully or most heavily on the Spanish versions. Those using a combined approach, often through bilingual educators, described using the Spanish materials to key in on science terms associated with each activity, noting students lacked familiarity with specific science terms in Spanish.

To what extent did grantees feel they were able apply findings on engaging girls in science? While grantees consistently praised the training and related *SciGirls* resources for raising their awareness about how girls learn and enjoy science they were less certain about the extent to which they actually applied specific findings when implementing their programs. Many grantees indicated that they couldn't recall the strategies, or indicated that they were: "a little bit fuzzy, in the background of their thinking, not bold but there in a subtle way, or got lost to their own ways and process of working with girls." In a few cases grantees that were involved in both *SciGirls en Español* and *SciGirls en Familia* indicated some confusion between The *SciGirls Seven: Proven Strategies for Engaging Girls in STEM* and the Seven Steps of scientific inquiry, indicating that both involve the number 7 so when they were thinking about applying educational strategies they defaulted to concentrating on the steps of scientific inquiry. Grantees involved in both the *SciGirls en Español* and *SciGirls en Familia* projects indicated that by having the benefit of a second training, in this case an online training, the information was clearer and they felt more prepared to take the strategies to heart and implement them with intent.

Among the *SciGirls* strategies featured, two most stood out for grantees: the fact that girls benefit from (i) collaboration (ii) and from relationships with role models and mentors. Those focusing on the collaborative strategy tended to be from organizations that also featured boys in their programs where competitive elements played a factor in group work, so they found themselves trying to be cognizant of this strategy in setting up the environment for girl participants. Those focusing on role models and mentors emphasized that they went into their project actively looking to find female volunteers, students, and scientists to ensure this strategy was addressed. A few grantees mentioned that they took to heart the strategy that girls are motivated by projects they find personally relevant and meaningful. They felt that the selection of activities put together by the *SciGirls* team took this into account, and that their job was to then help provide local context. Beyond these three strategies, however, grantees rarely discussed the other four strategies when describing their project activities or impacts.
Looking back on their project, what did grantees identify as the main highlights of their project? Grantees mentioned a wide range of highlights, some relating to specific events they hosted while others related to a process that developed over the course of the grant period. Examples of the highlights they mentioned follow:

- The initial excitement of the first session when the girls did a SciGirls activity (birds net), which infused science learning into a craft project groups might normally might do as part of a regular troop activity.
- The culmination of student work and sense of rapport and accomplishment that came together at the end of the program.
- The pride cultivated in the girls over time as they learned about science and took on leadership opportunities.
- Bringing the SciGirls en Español opportunity and materials to girls in impoverished areas and watching the excitement and appreciation of the grantees travelling a long distance to bring this to them.
- Seeing families’ transition from disinterested and even distrustful to avid SciGirls advocates.
- Watching the girls open their minds to scientific inquiry and being able, with time, to not just play with lip gloss, but to also enjoy and investigate materials like owl pellets, something initially perceived to be disgusting.
- The mentoring and bonding that occurred between the female volunteer mentors and girls.
- The professional development that occurred with the volunteer staff in the program, seeing the need to mentor girls in STEM, and becoming an advocate.
- The fieldtrips to places that girls enrolled in the program would not otherwise have an opportunity to visit, such as the zoo and IMAX.
- Offering non-Spanish speaking girls an opportunity to learn Spanish and Spanish-speaking girls an opportunity to learn English.

Did grantees readily track, report, and reflect on project impacts? Grantees’ final reports tended to focus more on their programmatic details than on their impacts. About one-third of the grantees reported that they conducted some type of evaluation, using either surveys or interviews. The reports in these cases did not describe specific results, but offered sample quotes or a general summary of grantees’ observations. Other grantees described anecdotal evidence of project outcomes. These grantees described their project outcomes in positive terms, with no negative unintended impacts cited.

Several unintended positive effects were identified, however. In some cases grantees discovered that their project cultivated teamwork, leadership, and proficiency in STEM teaching among project staff, volunteers or teen mentors. In other cases, grantees observed a multiplier effect that went beyond the participating girls themselves and extended to the sisters, cousins, and mothers who accompanied girls at the SciGirls en Español session.

What factors did grantees feel facilitated or helped their project to succeed? Grantees reflected on a number of factors that they felt facilitated or helped their projects to succeed. The main factors they touched on are summarized below, under the broader categories of: (i) outings and final culminating program, (ii) community network, (iii) organizational support/mission, and (iv) project staff rapport/approach. Specific examples in each case included:

(i) Outings and final culminating program
- Culminating end of program presentation – where public and families, partners and program staff and board come together to see what girls have been doing and have accomplished.
- Fieldtrips – where girls were exposed to community events they otherwise would not have an opportunity to experience and relate to SciGirls.

(ii) Community network/connections
- Partner collaborations – to fill in missing expertise, supplies, role modeling through visiting expertise
- Volunteer base - particularly young volunteers the girls looked up to and could relate to.
- Access to past or current comparable programs – to draw on what worked with other girls.
- Finding hub of community buzz – to get the word out about the program.

(iii) Organizational support/mission
- Organization mission is STEM or girl empowerment focused - so it's part of the institutional culture
- Starting preparations early – as in end of school year if program is to start in the fall.
- Having organization access to multiple program sites – so staff could regularly meet, cross-reference and troubleshoot.
- Support of and buy-in from project manager - serves as a good sounding board, helps problem solve.

(iv) Staff rapport/approach
- Bilingual facilitators – fluent, had a blend of experiences in community culture from which the girls resided but not essential to have STEM background as materials were easy to use, flexible, and clear.
- Positive attitude and thinking – to engender enthusiasm and the expectation that although there may be resistance or inertia to initial program ideas, having a positive plan to address these barriers was key.
- Creativity – incorporating what the organization does best with the SciGirls activities, as in using troop related arts and crafts resources and techniques into the science activities.
- Open mind/having fun with it – being flexible when things don't go according to plan and then seeing how the activities connect with the girls where the girls take you.

➡️ What challenges or barriers did grantees face in accomplishing their project goals?
Grantees indicated that the main challenges or barriers they faced in accomplishing their project goals involved: working with/communicating with families, working with girls, working with community organizations, logistical/time constraints, and adapting activities for use in low SES communities. Specific examples in each case follow.

(i) Working/communicating with families
- Convincing parents and students this was worthwhile and would have a long term effect
- Gaining trust so parents/guardians would be comfortable leaving girls for extended periods/overnight, on field trips
- Making sure parents/guardians had information they needed to know available in Spanish on ongoing basis to ensure participation in fieldtrips and other activities
- Accommodating girls' siblings, parents, and friends who attend the SciGirls programs – need to factor this in and the cost of babysitters
- Parents not understanding what SciGirls stands for due to language barrier and lack of a translation
- Negotiating with boys and their families why this program is for girls

(ii) Working with girls
- Motivating girls coming in with negative attitude, unmotivated
- Challenge of working with broad range of ages to meet goal of being inclusive to girls in the community
- Drop-out due to transient community, sports season

(iii) Working with community organizations
- working with community centers – scheduling and facility use logistics, and lack of flexibility
- Lack of access to facilities in low SES communities.

(iv) Logistical/time constraints
- Transportation for girls – some families particularly women, don’t drive, issues with drivers licenses, required providing transportation and using bilingual educators to participate and interface with parents/guardians
- Transportation for staff/volunteers – outreach in communities often involved travelling long distances and cost was incurred by staff/volunteers
- Time constraints – fitting all the steps of each activity within an hour and a half session including settling in time, snack, and some pressures from families to have the girls home by a certain time

(v) Adapting activities for use in low SES communities
- In this case grantees discussed difficulties they experience translating the activities, culturally, for use low SES communities - like the bogs or jump rope activity where it just isn't part of the culture the girls participate in or makeup which is too expensive. Where very often grantees felt they didn’t need to adapt any of the activities, in these cases, grantees said they went a different direction.

Did the grantee projects indicate sustainability or extended influences beyond the life of their grant?
Most grantees identified at least one way that their organization or a partner organization continued to benefit from or use the SciGirls en Español materials, training, or project-specific programming after the life of the grant. Most often grantees described efforts to continue to use the SciGirls en Español materials in subsequent programs. Some grantees described efforts to disseminate the SciGirls en Español materials and strategies, such as distributing the Activity Guides and DVDs to local educators or presenting information about SciGirls en Español and their particular project at, for example, an annual science teachers' conference. Finally, a few grantees described efforts to spearhead training, such as training local teachers or teen mentors to use SciGirls en Español materials in similar settings.

What longer term impacts did the grantee program have on the grantee's organization, girls, and staff/volunteers that participated?
Grantees described lasting impacts from their projects on the girls and families that were served, the staff/volunteers that participated, and the hosting organization. The major impacts outlined in each area are briefly summarized below.

(i) Girls and families served
While none of the grantees provided information on their project’s long term measurable impacts, some did include evaluation forms at the conclusions of their programs. These grantees consistently indicated positive reactions from girls and their parents. In terms of longer term impact, several months later in most cases, the grantees observed that many participating girls and families:

- Participated in other STEM programs, recalled SciGirls highlights, expressed interest in participating again, and praised the program structure, routine, and hands-on activities.
- Talked about new science-related projects or activities they were working on, such as a Girl Scout badge work or a science fair entry they are doing, and asked for help or input from the SciGirls team members.
- Made repeat visits to STEM events and activities at informal science centers after being provided discounted or free memberships.
- Re-enrolled in *SciGirls en Familia* projects and were positive and enthusiastic role models to new program participants.

(ii) Staff/volunteers
In this case grantees pointed to shifts they observed in staff and/or volunteers' awareness, skill, and advocacy as follows:

- More easily retained for new programs with a similar focus – since their buy-in was already there, they were already trained, and could start from the ground running. The positive benefits from the program seem to have played a role in staff retention and lower turnover, which could be attributed to, for some grantees, the opportunity to move into *SciGirls en Familia* grant.
- Supportive advocates for doing more STEM projects focused on girls, for looking out for similar opportunities, and for helping with recruitment and enrollment.
- More involved in cultivating leadership among staff and empowering staff to take on their own programs, troops, and grant writing.
- Instrumental in altering staff and others' perceptions of the host organization's mission relating to STEM, such that for example, an organization like Girl Scouts is more than camping, cookies and crafts.
- Increasing staff comfort with STEM content, as one staff recalled: *I wasn't comfortable with especially math as a kid and wondered how someone like me could teach who doesn't understand it but I feel so much more comfortable and it took me back to the scientific method and the whole science fair thing.*
- More aware of the need for educating girls in STEM and providing them with opportunities to engage with STEM.
- More fluid in bilingual skills and comfortable communicating with girls and families in Spanish.
- More skilled in using technology and looking for opportunities to use media in youth programs.

(iii) Grantee organization
In these cases grantees observed shifts at an institutional level, as in:

- Strengthened institutional desire to diversify afterschool programs and to provide more materials and instruction in Spanish.
- Increased institutional focus on developing girl-only programs.
- Strengthened institutional focus on STEM - helped build foundation and desire for increased programming as part of institutional mission.
- Enhanced staff skill set in collaborating with partner organizations and learning how to nurture relationships to foster in-kind contributions and other support to meet the needs of poor communities.
- Extended staff’s use of *SciGirls* materials within and outside the organization – through lending books, videos and activities to teachers, educators, and troop leaders.

**To what extent did grantees use *SciGirls* materials after the grant period ended?** Nearly all of the grantees identified one or more ways that the *SciGirls* materials had been used in the months since the grant period ended. At a minimum, the resources were available in a resource library or office setting for use by other staff members at the grantee organization. Most grantees also named specific examples of how the resources had been adapted for use in various other settings including at booths at local community festivals or events, in camps, afterschool programs.
**Did grantees have suggestions for enhancing sustainability of their programs over time?**

Grantees provided a variety of suggestions for helping projects to have sustainable impacts over time beyond the end of the grant period. These included:

- Foster opportunities for ongoing collaboration between grantee projects so staff can share resources and ideas, help troubleshoot choose of activities for local regions depending on for example it is a river, ocean, or bog community.
- Develop a Ning site to alert you when there is new information, so you are reminded to check it for updates or discussion with other grantees.
- Provide ongoing support in Spanish that can be accessed by project staff, volunteers, and parents, and make template forms available in Spanish for easy download.
- Provide pamphlet or other resource for showing how *SciGirls* can be used long-term, in the classroom, at home, etc...beyond what projects do in their grantee projects.
- Have a place where girls can go online and share their *SciGirls* stories and experiences. Connect what is done at the local level with what girls are doing in other locations around the country to broaden their frame of reference and see other girls like themselves.
- Periodically revise and update the *SciGirls* activity books with new material, rather like the Girl Scouts trade books do to offer fresh material and content.
- Partner with national organizations that are focused on girl empowerment and/or STEM education that have local chapters or programs to create additional synergy, help with overall organization across sites, and again cross-sharing of resources and ideas (e.g., American Chemical Society, Girl Scouts of the USA).
- Making of the project a community-based program by training not only educators but parents and adults involved in the girls' education and having them come up with new ideas and materials.
- Provide technical assistance to help grantees conduct pre and post evaluations of girls, family members, and staff and volunteers to help refine the program over time and assess final outcomes.
Evaluation Team

The evaluation team was co-directed by Valerie Knight-Williams, Ed.D., and Divan Williams Jr., J.D., with assistance from Javier Carillo, Ora Grinberg, Eveen Chan, Tal Sraboyants, David Towers, and AJ Chambers. The team has collaborated previously on the evaluation of informal science education projects targeting Spanish speaking audiences, including current initiatives associated with the Pulse of the Planet radio program and the Exploratorium's Evidence website project. Knight Williams Inc. has also collaborated on more than thirty multimedia science education projects funded by the National Science Foundation's Informal Science Education program since 1990.

The firm is based in Sacramento with associates located in San Francisco, Washington DC., New York, Miami, Portland, and Seattle. The firm's projects are frequently national or regional in scope, target public and professional audiences in diverse settings, and typically incorporate one or more of the following media: television programs, giant screen films, radio programs, museum exhibits, websites, interactive multimedia, and curricula or other print materials.

Acknowledgements

- Richard Hudson of tpt for providing overall direction for the evaluation and for assisting with grant and report writing.
- Lisa Regalla of tpt for helping to coordinate the evaluation, review evaluation procedures, and assist with report editing.
- Emily Stevens of tpt for coordinating the evaluation and grant administration.
- Margaret Duden and Adine Thoreen of tpt for providing project materials, grantee records, evaluation forms, liaison support with grantees, and other ongoing support.
- The SciGirls en Español grantees for speaking with us at length about their grant award process, their training experience, and the implementation of their projects, particularly so many months after their projects were completed. We also appreciated the additional time they dedicated to corresponding with us about their projects via email and survey. In several instances, grantees went a step further to provide us with supplemental project materials, such as template registration forms, participant surveys, student worksheets, staff journals, and photographs, to better help us tell their stories.
Appendix 1

Assorted template forms in English and Spanish provided by grantees for use in future programs:

- Behavioral expectations forms
- Evaluation forms
- Registration forms
- Medical liability release forms
Señoritas en Ciencias Participant Expectations

The following expectations are established for each participant to have a positive and safe experience at Sci-Port’s Señoritas en Ciencias program. The program staff has discussed these expectations with the participants but we would appreciate your help in reinforcing them. We know this is going to be a wonderful experience for all involved, staff and participants alike.

1. **We only walk** in Sci-Port: Louisiana’s Science Center.

2. **We may have candy and food in the Galaxy Café only.** No food or drink including candy or gum in the center.

3. **The golden rule...** Treat others as you want to be treated. This means raising your hand to talk, respecting other's personal space, being considerate and helpful, etc.

4. **Stay with your group at all times.** Your leader will set up boundaries for free time.

To reinforce these rules and encourage an appropriate and safe learning environment we employ the **“Three Strikes and You’re Out” Policy.**

- On the first infraction of the rules a warning will be issued. Leaders will stop and make sure the participant realizes they are duly warned.

- With the second infraction there will be time-out.

- If there is a third offense, there will be a counseling session. This is the participant's first strike.

- After following the above policy for the second time, the participant will be counseled and the participant’s guardian will be contacted. This is the participant’s second strike.

- After the above policy is followed for the third time, the participant will be sent home and they will not be allowed to return to the program. This is the participant’s third strike.
Señoritas en Ciencias Evaluation (Evaluación)

Help us improve our program by reviewing with your child her program experience. Please complete this form using the scale below. Thank you for your valuable input!
Ayúdanos mejorar nuestro programa por revisando con su hija sobre experience del programa de ella. Gracias para su realimentación importante.

Please rate each feature of the program using the following scale.
Por favor grade cada característica del programa usando este ejemplo:

1 -- Exceeded My Expectations (Excedió mis expectaciones)
2 -- Met My Expectations (Esta de acuerdo con mis expectaciones)
3 – Uncertain (Incierto)
4 -- Did not meet my expectations (No Esta de acuerdo con mis expectaciones)

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What did you like most about the program?
¿Que le gusto a Ud. mas sobre el programa?
Comment (comentarios):

What did you like least about the program?
¿Que le gusto a Ud. lo menos sobre el programa?
Comment (comentarios):

Would you recommend the Senoritas en Ciencias program to your friends?
¿Recomendaría Ud. el programa de Señoritas en Ciencias a sus amigos?
Comment (comentarios):

Would you be interested in participating in a science program for the whole family?
¿Estaría Ud. interesado en participar en un programa de ciencias para toda la familia?
Comment (comentarios):

What times/day of the week would be best to meet with your family for the science program?
¿Cuales días/horarios serian más conveniente para Ud. y su familia para participar en el programa de Ciencias?
Other comments (Otros comentarios):
Medical/Liability Release

This is my authorization for Sci-Port Louisiana’s Science Center to obtain necessary medical and/or surgical treatment in the case of illness, accident, or any emergency situation that may arise. These medical services are to be performed by the Emergency Medical Team, or in their absence, by any medical doctor at the nearest hospital.

I further state that I will not hold Sci-Port Louisiana’s Science Center liable for such medical and/or surgical treatment in cases of illness, accident, or any emergency situation.

(Please Print)
Child’s name __________________________________________________________________________

Birth Date ____________________________________________________________________________

Parent’s Name _________________________________________________________________________

Place of Employment ___________________________ Work number _____________________________

Home number ____________________________ Cell phone number _____________________________

Emergency contact: Name ______________________ Relationship ______________________________

Home number ______________________ Work number ________________________________

Others authorized to pick up my child ____________________________________________________

Insurance company ___________________________ Policy number _____________________________

Pediatrician ____________________________ Phone number _________________________________

(in case emergency contacts cannot be reached)

Allergies ______________________________________________________________________________

Drug complications _____________________________________________________________________

Medical conditions/alert __________________________________________________________________

Other _________________________________________________________________________________

Please note that the above information will not be released to insurance companies or to unauthorized persons.

Parent or Legal Guardian __________________________________________________________________

Signature ____________________________________________ Date ________________________

Knight Williams, Inc. Appendix 1
Permiso de Obligación Médica

Esta es mi autorización para Sci-Port: LOUISIANA’S Science Center para obtener tratamiento médico y/o quirúrgico necesario en el caso de enfermedad, accidente, o cualquier situación de emergencia que pueda suceder. Estos servicios médicos serán administrados por personal del departamento de Emergencias Médicas, o en su ausencia, por cualquier doctor médico en el hospital más cercano.

Además, yo establezco que no encontrare a Sci-Port: LOUISIANA’S Science Center responsable por cualquier tratamiento médico/quirúrgico que se reciba en casos de enfermedad, accidente, o cualquier emergencia.

Nombre de la Niña______________________________________________________________________________
(Girl’s Name)
Fecha de Nacimiento_____________________________________________________________________________
(Birth Date)
Nombre de Madre o Padre_________________________________________________________________________
(Parent’s Name)
Lugar de Empleo___________________________________Num. de Tel. Del trabajo__________________________
(Place of Employment) (Work Tel. Number)
Num. De Tel. De casa___________________ ____________Celular________________________________________
(Home Tel. Number) (Cellular)
Contacto de Emergencia (Emergency Contact)
Nombre _________________________________________Relación_______________________________________
(Name) (Relationship)
Num. De Casa_____________________________________ Num. De Trabajo________________________________
(Home Tel. Number) (Work Tel. Number)

Otras personas autorizadas para recoger a mi hija____________________________________________________
(Other people authorized to pick up my child)

Compañía de Seguro Medico______________________________Num. De Police_____________________________
(Insurance Company) (Policy Number)
Pediatra______________________________________________ Num. De Telf.______________________________
(Pediatrician) (Tel. Number)
Alergias________________________________________________________________________________________
(Allergies)
Complicaciones con medicamentos________________________________________________________________
(Drug complications)
Condiciones Medicas/de Alerto_____________________________________________________________________
(Medical conditions/alert)
Otras condiciones________________________________________________________________________________
(Other)

Por favor note que la información incluida no será compartida con compañías de seguro médico o con personas sin autorización.

Padre(s) o Guardián legal__________________________________________________________________________
(Parent or Legal Guardian)
Firma___________________________________________________________Fecha__________________________
(Signature) (Date)
Señoritas en Ciencias: Expectaciones de las Participantes

Las siguientes expectaciones son establecidas para que cada participante tenga una positiva y segura experiencia en el programa de Sci-Port: Señoritas en Ciencias. El personal del programa ha discutido estas expectaciones con las participantes pero nosotros agradeceríamos su ayuda en reforzar estos. Nosotros estamos seguros que esto será una experiencia maravillosa para todos involucrados, personal e participantes igual.

2. Nosotros podemos tener dulces y comida en el Galaxy Café solamente. No se permite comidas o bebidas incluyendo dulces y chicle en el centro.
3. La regla de oro: Trata a otros como quieres ser tratada. Esto incluye levantado la mano para hablar, respetando el espacio personal de otros, ser atento y amable, etcétera.
4. Quedarse con su grupo a todo tiempo. Su maestra definirá límites cuando tienen tiempo libre.

Para refocer estas reglas y promover un ambiente apropiado y seguro nosotros esforzamos el póliza de “tres strikes y sales.”

- En la primera infracción de las reglas una advertencia será dada. Maestras pararan las actividades para asegurar que la participante se entera que ha sido advertida.
- Con la segunda infracción se le dará un Time-out.
- Si se hay una tercera ofensa, se hará una sesión de consulta. La aconsejaran que est.
Señoritas en Ciencias Formulario de Registro

Información de la Niña
Nombre del Niña _________________________________________________________________________
Dirección _____________________________________________________________________________
_______________________________________________________________________________________
Nombre de Escuela ____________________________ Grado (para 2009 - 2010)_____________________
Idiomas: Español / Inglés / Bilingüe Edad de la niña ____________________________

Información del Guardián
Nombre del Guardián____________________________ Relación _________________________________
Teléfono ____________________________ Teléfono _________________________________
Dirección _______________________________________________________________________________
_______________________________________________________________________________________
Lugar de Empleo ________________________________Teléfono _________________________________
Idiomas: Español / Inglés / Bilingüe

Información
Sesiones: Domingos en Enero/Febrero/Marzo 2010 (9:30 a.m. – 11:30 a.m.)
(Marque cuatro sesiones)
__ 10 Enero __ 7 Febrero
__ 17 Enero __ 21 Febrero
__ 24 Enero
__ 31 Enero
__ 28 Febrero
__ 7 Marzo
__ Marque aquí si quiere atender la noche de Marzo 13 Sobre noche Camp-in
(Sábado, Marzo 13, 2010 7 p.m. – Domingo, Marzo 14, 2010 7 a.m.)
Nombre de la guardián (mujer) acompañando la niña en el camp-in:
__________________________________________________________________
Señoritas en Ciencias Registration Form

Child's Information
(Please Print)

Child’s name _________________________________ Birthdate ________________________________
Residential Address ___________________________________________________________________
___________________________________________________________________________________

School Name _________________________________ Grade Level (for 2009 - 2010)_______________
Language: Spanish / English / Bilingual Child’s Age ______________________________

Guardian Information
(Please Print)

Guardian’s Name _____________________________ Relationship _____________________________
Home Phone ______________________ Cell phone ______________________________
Mailing Address ______________________________________________________________________
___________________________________________________________________________________
Place of Employment __________________________ Work Phone ____________________________
Language: Spanish / English / Bilingual

Session Information

Sundays in January / February / March 2010 (9:30 am - 11:30 am)
(Pick four sessions)

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<td>__31 __</td>
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</tbody>
</table>

Check here if attending March 13 Overnight Camp-in
(Saturday, March 13, 2010 7 p.m. – Sunday, March 14, 2010 7 a.m.)

Name of female guardian attending camp-in:
__________________________________________________________
Señoritas en Ciencias
Media Release Permission Form

By signing this form, you agree to allow Sci-Port: Louisiana’s Science Center and Twin Cities Broadcast Television to use your family’s likeness in any print, media, television, or advertisements.

___________________________________         ___________________________________________________
        Name                                    Signature

Señoritas en Ciencias
Formulario de Consentimiento

Al firmar esta hoja, yo estoy de acuerdo en permitir el uso de la imagen de su familia por Sci-Port: Louisiana’s Science Center y Twin Cities Broadcast Television en producciones de televisión, anuncio, o medios de comunicación.

___________________________________          ____________________________________________________
        Nombre                                    Firma