

Summative Evaluation Report
Dragonfly TV SciGirls
Grantee Outreach Program



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Overview

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Supported by a grant from the National Science Foundation's Program for Gender Equity, *Dragonfly TV SciGirls* (*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. Since 2005, Twin Cities Public Television (TPT), the PBS affiliate station in St. Paul/Minneapolis, has awarded 24 organizations ("grantees") with grant awards, multimedia resources, and training to help outreach staff implement *SciGirls* initiatives in their local communities.

To assess the impact of the *SciGirls* grantee program, Knight-Williams, an independent evaluation firm specializing in informal science education media projects, conducted a summative evaluation of the program's first three years. The evaluation focused on 17 of the 24 *SciGirls* grantees funded from 2005-2007. This group of 17 included the PBS stations for which grantee contacts were available (8 out of 14) and the science centers/museums that completed *SciGirls* projects by the evaluation period (9 out of 10). The evaluation relied on secondary data, most notably the grantees' project proposals and final reports, and the reflections of the principal staff responsible for directing the grantee projects, as reported through in-depth telephone interviews and an online survey. While this retrospective design did not allow for comparisons over time, the evaluation findings confirm that the grantees addressed the overall goals of the *SciGirls* program and fulfilled their grantee obligations to TPT. These goals and obligations, combined for the purposes of this overview, included:

- 1) participate in a *SciGirls* training;
- 2) strengthen proposed community partnerships and act as lead coordinator among partners;
- 3) reach diverse audiences;
- 4) use *SciGirls* resources to reflect the inquiry and authentic investigation approaches in *Dragonfly TV*;
- 5) deliver hands-on science encouragement and career guidance in creative and dynamic ways;
- 6) complete a final report documenting the project's outcomes; and
- 7) demonstrate sustainability beyond the completion of the grant.

The key findings from the evaluation, grouped according to these 7 goals and obligations, are briefly summarized below.

1. Participate in a *SciGirls* training

All but one grantee participated in the *SciGirls* grantee training program. Grantees consistently praised the program and identified the most valuable aspects to be the hands-on activities, the trainer's knowledge and enthusiasm, and/or the opportunities to connect with other staff and partners. Grantees generally agreed that the training program was worthwhile, organized, and well-run and that it gave them a better understanding of the *SciGirls* program goals. They also agreed that they gained knowledge that was best acquired by attending in person and that they learned valuable ways to use the *SciGirls* video, print, and web resources. Grantees were somewhat divided about whether the program should dedicate more time to research findings on how girls learn and enjoy science and how the resources related to their needs and experiences.

2. Strengthen proposed community partnerships and act as lead coordinator

Grantees named the opportunity to form new community partnerships as one of the two main reasons for seeking a *SciGirls* grant. When choosing partners, grantees most often focused on youth organizations, followed by scientists from educational or commercial institutions, museums, media organizations, schools/teachers, or environmental/outdoor clubs or associations. Grantees generally considered their partnerships to be successful, and frequently praised their partners for: offering leverage, being easy to approach or get buy-in from, yielding collaborations that were natural rather than forced, and offering the missing pieces that they needed for their projects, such as site/spacing, staffing, recruiting, and guest speaker support. The partnerships did create a few challenges for grantees, particularly in terms of dealing with: partner staff turnover, attrition among participants recruited by partner organizations, and aligning partners' established youth programs with the goals of *SciGirls*.

3. Reach diverse audiences

The number of participants served by *SciGirls* projects ranged widely, from a low of 12 to a high of 512. While the average number of girls served across the projects was 112, the majority of projects served between 12-40 participants. With the exception of one project that targeted educators, the projects mainly targeted girls, typically 5th - 9th graders. To recruit girls, grantees partnered with various youth organizations, most often the Girl Scouts, followed by Boys and Girls Clubs, and Girls Inc. While grantees did not verify the types or numbers of underserved youth participants, all stressed that their projects were designed with this goal in mind, and that they chose partners accordingly. Grantees most often described serving girls from low income, followed by racial minority backgrounds. Less frequently they described serving girls with special needs, residing in rural regions, or from military families.

4. Use *SciGirls* resources to reflect inquiry and authentic investigation in *Dragonfly TV*

All of the grantees used some combination of the multimedia resources provided by TPT. While grantees found all of the resources valuable, they tended to most highly rate the videos, followed by the print activity guides, and then the website, as follows.

Videos: All but one grantee used the videos in their *SciGirls* projects. While few grantees reported regular use of the videos, most found ways to use them at least occasionally, typically as a warm-up/icebreaker or to model the scientific inquiry process prior to doing an Investigation activity. The most common reasons grantees identified for not relying upon the videos were that: the content didn't quite mesh with their project focus, they wanted to get the girls immediately active by doing their own "live" inquiries, or the videos featured girls interacting with materials or environments that weren't readily available in their region.

Print activity guides: All but one grantee used the print activity guides in their *SciGirls* projects. Few grantees reported regular use of the guides, but most found ways to use them at least occasionally. While most grantees used the Icebreaker activities, less than half used the Investigation activities as written, although they were sometimes adapted to fit the needs of a project. The most common reasons grantees identified for not relying upon the activity guides were similar to those applied to the videos above, including: the content not meshing

with their projects' focus, their preference for having participants develop their own investigations, or their lacking access to materials required to complete the activities.

Website: The majority of grantees used the website early on, during their grant or project planning stages to see if they qualified for the grant, for grant writing support, or for background knowledge. More than half then continued to use the site as a reference tool or to download materials. Several grantees said they referred partners, teachers, or girls to the site, although few actually used the site with girls. Those who used the site with girls used the message board feature, watched an episode that related to a topic they were covering, and/or just had the girls browse the site. The most common reason for grantees not using the site was that it didn't offer material beyond what they already received from TPT.

5. Deliver hands-on science encouragement and career guidance in creative dynamic ways

Camps were the most common type of project offered by the grantees, followed by after-school programs and sleep-over or day-long events. As noted in section 4 above, grantees were focused on getting girls actively involved in doing science investigations, and being hands-on. Career guidance was delivered either by using the scientist profiles featured in the *SciGirls* materials or through guest speakers arranged with partners. As noted under section 6, "science encouragement" and "career guidance" were key elements of the gains grantees discussed about their project outcomes.

Grantees were also attune to *SciGirls*' focus on promoting girls in science, as nearly three-fifths incorporated research findings on how girls learn and enjoy science into their projects' design, promotions, and/or implementation. Grantees that strongly relied on the findings said they were essential in the design of their projects as they lacked experience in this area. Grantees that relied little on the findings noted that they basically reinforced information they already knew from prior work. Meanwhile, about two-fifths of the grantees had some difficulty recalling the research findings, explaining that either too much time had elapsed for them to remember the findings or that the findings weren't prominently enough featured in the *SciGirls* training program or materials for them to take notice.

6. Complete a final report documenting project outcomes

All 17 grantees completed a final report that documented their project activities and outcomes. When asked to reflect on the impact of their projects on the girls who participated, grantees typically discussed outcomes that were both cognitive and attitudinal in nature. Most often they concluded that their projects: increased girls' confidence to participate in science, deepened their understanding of the inquiry process, broadened their perception that science is bigger than previously thought, increased their awareness of and interest in science careers, and/or showed them that science can be fun and exciting.

Nearly half of the grantees did not conduct a formal evaluation to assess their project outcomes, however, or they relied solely on informal feedback from program participants and/or staff. Those who did conduct an evaluation most often asked the participating girls and/or their parents to complete written or telephone surveys at the end of their projects. Some grantees also sought staff or outreach partner feedback. The main reasons grantees cited for not conducting an evaluation were time constraints or oversight.

7. Demonstrate sustainability beyond the completion of the grant

All of the grantees reported that their departments were still conducting or planned to conduct additional *SciGirls* programming. While only a couple of grantees planned to continue with their original project model, most planned to expand or develop variations of their projects. At a minimum, grantees planned to fold the use of *SciGirls* materials into their existing educational programs.

Even with the retrospective design limitations, the findings show that the *SciGirls* grantees met these 7 goals and obligations. And as these goals and obligations are fundamental to the grantee program's larger mission of *encouraging girls' interest in science by building capacity among outreach professionals in the area of gender-equity teaching and learning* (page 1), TPT was successful in fulfilling its mission. Via the NSF Program for Gender Equity grant, TPT awarded 24 PBS stations and science centers/museums with outreach grant awards over a 3 year period that were typically under \$10,000 each. As reported by the 17 organizations accounted for in this report, TPT also efficiently delivered to them multimedia resources that incorporated authentic investigations, scientific inquiry, and research findings on how girls learn and enjoy science. The resources were well-utilized by the grantees across diverse project sites, due in part to opportunities created through the grant award, but also, according to the grantees, the resources' high internal value. Additionally, the support provided by TPT, most notably through the *SciGirls* training, and by local partner collaborations, also played a critical role. These two levels of national and local support, TPT and community partnerships, respectively, were in turn highly valued, well-utilized, and ultimately integral to the grantees' success in sustaining, modifying, or even expanding their *SciGirls* projects after the grant period.

Finally, grantees were overwhelmingly positive about their experiences with their *SciGirls* projects. While acknowledging some challenges in administering their grants, typically involving time or financial constraints, most grantees strongly agreed that they found valuable ways to use the *SciGirls* materials, that they received the materials in a timely manner, and that they received sufficient direction and support from TPT. Grantees also agreed that they had a good understanding of the goals of the *SciGirls* grantee program, that their project advanced these goals, and that their departments benefited from *SciGirls*.

Grantees did suggest a few ways to modify or expand the *SciGirls* grantee guidelines, training program, multimedia resources, and final reporting requirements. The following issues may be worth exploring for the future:

➤ The grantee guidelines

Offer strategies for how grantees can: supplement grant awards, form and maintain successful partnerships, address resistance to girls-only programs, maximize participant enrollment, minimize participant attrition and staff turnover, and find a fit between *SciGirls* programming and that offered by partnering youth-based programs.

➤ The training program

Add more information on: how girls learn and enjoy science, include training costs into the grant awards, and follow-up with a video conference call/webex.

➤ The multimedia resources

Expand the resources to include: grade level/standards information, supplemental take home materials with a regional and family focus, branded and waterproof *SciGirls* journals, updated T-shirt styles, dynamic blogging, web-based data representation, and activity-based materials and environments that are available and relevant, respectively, across diverse regions.

➤ The final reporting requirements

Include evaluation assistance or templates that enable grantees to report on common indicators while capturing their project outcomes in ways that also reflect their unique *SciGirls* outreach goals.

The full report and executive summary detail grantees' perspectives on all the above issues and offer specific ways to address each suggestion.