CALIFORNIA STATE LIBRARY
LIBRARY SERVICES AND TECHNOLOGY ACT (LSTA)

Final Program Narrative Report
(LSTA Form 9)

Grant Information

<table>
<thead>
<tr>
<th>Library Jurisdiction</th>
<th>Kern County Library</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Title</td>
<td>Teen and Tween Programs to Inspire STEM Learning</td>
</tr>
<tr>
<td>Grant Award #</td>
<td>40-8321</td>
</tr>
<tr>
<td>Grant Period</td>
<td>FY 2013/14</td>
</tr>
<tr>
<td>Amount of Grant Award</td>
<td>$6,500</td>
</tr>
<tr>
<td>Amount of Grant Expended</td>
<td>$6,500</td>
</tr>
<tr>
<td>Local Match</td>
<td>0</td>
</tr>
<tr>
<td>In-Kind</td>
<td>$5,570</td>
</tr>
<tr>
<td>Total Amount of Project</td>
<td>$12,070</td>
</tr>
<tr>
<td>(amount expended + match + in-kind)</td>
<td></td>
</tr>
<tr>
<td>Number of Persons Served</td>
<td>400</td>
</tr>
<tr>
<td>(should not include total population of service area or potential population to be reached)</td>
<td></td>
</tr>
</tbody>
</table>

Project Director

<table>
<thead>
<tr>
<th>Name</th>
<th>Maria Rutledge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title</td>
<td>Head Librarian - Beale Memorial Library</td>
</tr>
<tr>
<td>Library Address</td>
<td>701 Truxtun Avenue, Bakersfield, CA 93301</td>
</tr>
<tr>
<td>Phone Number</td>
<td>661-868-0805</td>
</tr>
<tr>
<td>Fax Number</td>
<td>661-868-0799</td>
</tr>
<tr>
<td>E-mail Address</td>
<td><a href="mailto:maria.rutledge@kerncountylibrary.org">maria.rutledge@kerncountylibrary.org</a></td>
</tr>
</tbody>
</table>

This report is due on the date listed in the LSTA Grant Guide for this project. Follow this link to view the Grant Guide. http://www.library.ca.gov/grants/lsta/manage.html

Email this report in “word format” to lsta@library.ca.gov then mail ORIGINAL and 2 copies to:

California State Library
P.O. Box 942837
Sacramento, CA 94237-0001
Attention: Fiscal Office - LSTA

SIGNATURE: _______________________________ DATE: _______________________________
(Please sign in blue ink)
Project Final Report
A final narrative report is required on the use of federal Library Services and Technology Act (LSTA) funds following the completion of a project during each project year. The information you report will be used to complete the California State Library report of how funds were expended. Excerpts from this report may be submitted to the Federal government in their evaluation, or may be published by the State Library or shared with other institutions. Please answer all of the questions thoroughly. Please attach any reproduction copies of photographs of project activities or media produced for the project.

Project Purpose
Include your program purpose statement here

“Teen and Tween Programs to Inspire STEM Learning” will provide free, fun, interactive STEM after-school programs to promote confidence and interest in STEM learning among local youth, and increase community awareness in the value of after-school STEM programs. The programs will include: a five-day after-school Science Camp that will include a series of two-hour long activities covering science, engineering, technology, and mathematics concepts; and a STEM Fair that will include a variety of offerings such as displays, booths, videos, and activities intended to raise interest in STEM learning among teens and tweens.

Project Activities and Methods
How did you accomplish the project? What were the steps involved? How did you engage the target audience?

In September, we purchased the well-reviewed STEM Camp Kit from PCS edventures, and began planning how to use it for our STEM Camp. From October 2013 to January 2014, we coordinated with teachers at Washington Middle School - our target school - to invite their students for our Winter STEM Camp. During that time, we also recruited Camp Facilitators from our network of volunteers and through California State University Bakersfield - Center for Community Engagement and Career Advancement (CSUB-CECE). We developed the learning modules and the survey questionnaires, selected and acquired books in support of the learning modules, and signed up students for the STEM Camp.

We conducted the STEM Camp February 3-7, 2014 with 24 students and 4 Camp Facilitators - 3 of whom were paid and one was a volunteer. The Camp Facilitators included a Substitute Teacher, a Mechanical Engineer, a senior college student majoring in Biology, and a recent B.S. Math graduate. We carefully chose the Camp Facilitators and oriented them fully about their roles and the expectations for the program. To further engage the participants, we chose a cozy venue, provided refreshments and deliberately made the program fun and stimulating.

After we conducted the STEM Camp, we immediately began planning the logistics for the STEM Fair - who's going to do what, program line-up, venues, and presenters. We named the event "STEMtastic Saturday" and chose to hold it on April 19th during National Library Week. It was a half-day of STEM activities consisting of a Math story time, a 3D printing demo, a Math mystery game, a solar-powered model car building workshop, a Tangram puzzle challenge, a mechanical LEGO building workshop, a presentation from a local rocket scientist, Mr. Brandon Woods, and a showing of the PBS documentary, "Meteor Strike." Also, for the entire month of April, we hosted the "Storm of Asteroids" traveling exhibit from the Planetary Institute.

Project Outputs
What was created for the project and how much? (For instance three promotional brochures were created and 75 copies distributed; or three training classes were designed; two sessions of each were held, and 80 people were trained)
We built a core collection of STEM materials for teens and tween consisting of 62 books, 3 DVD sets and a subscription to the magazine, Make: Technology on Your Time.

We created 2 posters: one for the STEM Camp and another one for the STEM Fair.

We developed a syllabus for the STEM Camp.

We created a Job Description for STEM Camp Facilitator, which we can then use for future recruitments. We developed an activity plan for a STEM Camp that will serve as our blueprint for future offerings.

We developed a successful partnership with Washington Middle School.

Twenty-four 6th and 7th graders, mostly from Washington Middle School - a low-performing school - attended the STEM Camp.

About 150 people attended our multi-activity STEM Fair on April 19th and about 400 people viewed the month-long "Storm of Asteroids" exhibit.

### Project Outcomes (if applicable)

Please state the outcomes and the results of your evaluation.

On Day 1 of the STEM Camp, we asked participants on a scale of 1 to 5 - 5 being the highest and 1 the lowest - to rate their overall understanding of Rotary and Lever Motions before the workshop and after the workshop. Ninety-five percent of the participants noted an increase in their overall understanding of the concepts after the workshop. Participants were also asked to rate their level of confidence on their ability to build a motorized model before and after the workshop. Eighty-nine percent of the participants noted an increase in confidence after the workshop. Participants were asked to rate their interest in mechanical engineering before and after the workshop; 80% of them noted an increase in interest after the workshop. Lastly, 74% of the participants gave a 5 rating and 26% gave a 4 rating to the question "How likely are you to come to another program similar to this one?"

On Day 2 of the STEM Camp, we asked participants to rate their overall understanding of the concept of Center of Gravity before and after the workshop. Eighty-one percent noted an increase in overall understanding after the workshop. Participants were then asked to rate their ability to build a Jensen bar before and after the workshop and 90% noted an increase in ability after the workshop. Eighty-one percent noted an increase in interest in learning physics after the workshop. Seventy-six percent gave a rating of 5 and 24% gave a rating of 4 to the question "How likely are you to come to another program similar to this one?"

On Day 3 of the STEM Camp, we asked participants to rate their overall understanding of Polygons: 75% noted an increase in overall understanding after the workshop. After the workshop, 55% percent noted an increase in interest in learning geometry. In this aspect, the module will need to be improved a little bit more. However, seventy percent gave a 5 rating, 25% gave a 4 rating and 5% gave a 3 rating to the question "How likely are you to come to another program similar to this one?"

On Day 4 of the STEM Camp, we asked participants to rate their overall understanding of Condensation before and after the workshop; 90% noted an increase. We also asked them to rate their confidence in learning chemistry concepts before and after the workshop; 79% reported an increase. On the question "How likely are you to come to another program similar to this one?" 79% of the participants gave a 5 rating and 21% gave a 4 rating.

On Day 5 of the STEM Camp, we asked participants to write on a black board their overall impression of the STEM Camp. The results are reported under Anecdotal Information below.

We asked attendees of the STEM Fair to rate on a scale of 1 to 5 - 5 being the highest and 1 the lowest - their perception of the value of after-school STEM activities at the library. An overwhelming 93% percent gave a 5 rating, 3.5% gave a rating of 4 and 3.5% gave a rating of 3.

### Additional Project Outcomes

Please state any additional intended or unintended outcomes and what data sources you used.
**Anecdotal Information**  
Tell us a story. Give two or more examples of how the project has helped an individual or group in your community.

At the end of the STEM Camp, we asked the participants to write down on a black board their comments about the Camp. All the comments were positive and encouraging. Many of the participants commented that the experience was educational, fun, "amazing." Here are some of their comments:
"I loved the overall learning and creative thinking."
"This program was way fun and educational."
"It helped me learn things I never knew I was good at."
"I think STEM is the best. It's better than Camp KEEP."

**Exemplary Project**  
If you feel your project was exemplary and others could learn from it and replicate it, please tell us why.

**FEEDBACK FOR THE CALIFORNIA STATE LIBRARY ON THE GRANT PROCESS**  
We want to learn and improve our grant processes. Please let us know what worked and what we could do differently to make it a better experience. Thank you!