

**CALIFORNIA STATE LIBRARY
 FISCAL YEAR 2015-2016
 LIBRARY SERVICES AND TECHNOLOGY ACT (LSTA)
 PITCH AN IDEA GRANT APPLICATION**

ELEMENT 1: BASIC INFORMATION (please see application instructions for additional information)

Applicant Information

- | | |
|--|--|
| <p>1. Library/Organization
 Riverside County Library System</p> <p>3. Internet Web Site Address
 http://rivlib.info</p> <p>4. Project Coordinator Name & Title
 Dawn Wasley, Deputy Administrator</p> <p>6. Business Phone Number
 951-274-4503</p> <p>8. Mailing Address
 PO Box or Street Address
 5840 Mission Blvd.
 City
 Riverside
 State
 CA
 Zip
 92509</p> <p>9. Check the Appropriate Library Type
 <input checked="" type="checkbox"/> Public Library <input type="checkbox"/> Academic <input type="checkbox"/> K-12 <input type="checkbox"/> Multi-Type <input type="checkbox"/> Special/Other</p> | <p>2. Library's DUNS Number
 033248365</p> <p>5. Email Address
 dawn.wasley@lssi.com</p> <p>7. Fax Number
 951-369-6801</p> |
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Project Information

10. **Project Title** RCLStudios Pilot Project: Introducing STEM to Teens via 3D Printing
11. **LSTA Funds Requested** \$36,500
12. **Cash Contributions** \$0
13. **In-Kind** \$17,273
14. **Total Project Cost** \$53,773
15. **California's LSTA Goals** (*Check one goal that best describes the project*)
- | | | |
|---|---|---|
| <input type="checkbox"/> Literate California | <input type="checkbox"/> Content Creation/Preservation | <input type="checkbox"/> Community Connections |
| <input checked="" type="checkbox"/> 21st Century Skills | <input type="checkbox"/> Bridging the Digital Divide | <input type="checkbox"/> Ensuring Library Access for All |
| <input type="checkbox"/> 22nd Century Tools | <input type="checkbox"/> Information Connections | |
16. **Number of persons served** (*The number of persons who use or will benefit directly from this project*) 1,012
17. **Primary Audience for project** (*Select all that apply.*)
- | | |
|---|---|
| <input type="checkbox"/> Adults | <input type="checkbox"/> Pre-School Children |
| <input type="checkbox"/> Families | <input type="checkbox"/> Rural Populations |
| <input type="checkbox"/> Immigrants/Refugees | <input checked="" type="checkbox"/> School Age Children |
| <input type="checkbox"/> Intergenerational Groups (Excluding Families) | <input type="checkbox"/> Senior Citizens |
| <input type="checkbox"/> Library Staff , Volunteers and/or Trustees | <input type="checkbox"/> Statewide Public |
| <input type="checkbox"/> Low Income | <input type="checkbox"/> Suburban Populations |
| <input type="checkbox"/> Non/Limited English Speaking Persons | <input type="checkbox"/> Unemployed |
| <input type="checkbox"/> People with Disabilities | <input type="checkbox"/> Urban Populations |
| <input type="checkbox"/> People with Limited Functional Literacy | <input checked="" type="checkbox"/> Young Adults and Teens |
18. **This signature certifies that I have read and support this LSTA Grant Application.**

Library Director Name: Barbara Howison **Title:** Library Administrator

Mailing Address
(if different from above) _____ **City** _____ **Zip** _____

Library Director Signature: _____ **Date:** _____

ELEMENT 2: PROJECT BACKGROUND AND SUMMARY (please see application instructions for additional information)

Describe how this project was identified as a need, how it relates to your library's strategic plan, what will be accomplished if this project is implemented, and how you will know whether your project is successful. Summary should relate to activities in the timeline (Element 4) and include statistical info to support the project.

The RCLStudio Pilot Project will introduce Riverside County teens to scientific and mathematical concepts and activities with 3D printers in five selected libraries. STEM programs in libraries can support academic success and to increase potential as eligible candidates in future job markets for students of all ages. Only 59% of Riverside County students are ready or conditionally ready for college-level math courses. Fewer than half of California high schools offer computer science, and only 13% offer an AP course in the subject, according to the state's Education Department's data. The majority of Riverside County's public schools do not have 3D printers, and the Riverside County Library System (RCLS) has no 3D printers installed in any of the 35 library locations. This pilot project would bring 3D printers to residents of Riverside County who would not have it otherwise.

We hope that exposure to exciting new technology in our libraries will encourage youthful curiosity and further investigation into the fields of math, science, engineering, and design. We want to help channel the imagination of Riverside County's 1.2 million residents into future explorations in college, career, and entrepreneurial opportunities. The introduction of 3D printing to teens and their families in the diverse communities of Riverside County would help us in our mission of providing lifelong learning opportunities through equal access to informational, recreational, and educational materials. This STEM-oriented pilot project particularly addresses our "Succeed in School" strategic goal, for students to have the resources they need to succeed in school, and our "Lifelong Learning" strategic goal, for residents to have the resources they need to explore topics of personal interest and continue to learn through their lives. Last year over 4.3 million visited RCLS's 35 libraries and 2 bookmobiles. Over 96,000 people of all ages participated in 5,270 events and activities in FY2014, of whom 9,707 were teenagers participating in 794 programs.

For this pilot project, we are requesting \$36,500 in LSTA funds in order to purchase 3D printing and computing equipment at five RCLStudios, to purchase library materials (print and audiovisual), to train staff and volunteers, and to cover staffing for desk coverage. We will place a 3D printer at a library in each of Riverside County's five supervisorial districts. At least one of the libraries will be a joint-use facility on a public school campus. We will partner with schools, teen advisory groups, Friends of the Library groups, robotics clubs, and other volunteers to hold public classes and demonstrations on the basics of 3D technologies. After staff and volunteers are trained on equipment and setup, we will select project designs and schedule class events, geared to teens, beginning with events at our RCLStudio libraries. We will prepare a STEM activity manual for RCLS libraries so we can send the 3D printing equipment to the other branches within our county's districts. The Riverside County Office of Education's STEM Center staff will assist us with publicity, volunteer recruitment, and the development of recommended guidelines for teachers in using library makerspaces. Program participants will be polled at events on exposure and perception to scientific and mathematical concepts. We will concentrate on reaching teens, but we hope to expand programs to children and adults, too.

RCLS staff have a proven track record in introducing new technologies into youth services programming. While our programming spaces may be limited at some branches, we are building upon the depth and breadth of current programming activities. Several branches, with the generosity of their Friends groups, have already hosted tech-oriented maker-type programs for children and teens, from LEGO clubs to toothbrush robots. This year a team at El Cerrito Library's LEGO club used a castle theme complete with working catapults. Woodcrest Library has co-hosted with the Riverside Robotics Society the largest free robotics event in the Inland Empire for the last four years. Several branches offer computer classes. Robidoux Library holds almost 100 computer classes a year, serving over 1,000 students. Several branches have active teen groups. Both staff and volunteers have been waiting to collaborate on a project of this type, especially after a representative from a local commercial makerspace, Vocado, demonstrated 3D printing at full audience capacity during the 2014 All Staff Development Day last September. Our community partners will support the program throughout five districts and help us to publicize the RCLStudio programs within the local schools. The office of Senator Robert Takano, co-founder of the Congressional Makers Caucus, has offered assistance in seeking corporate sponsors for this project. Because we are not in the first wave of libraries to offer 3D printing, we have many libraries to call upon for information and support. Furthermore, the newly created Technology Librarian position can provide more support to the front line staff in planning and implementing the programs. Following in our own footsteps, we are using our past experience and success to share our knowledge and build expertise. We are confident that the 3D printers will draw many teen participants, spark their ingenuity and creativity, and attract other groups as well.

ELEMENT 3: PLANNING AND EVALUATION (please see application instructions for additional information)

Please answer each area concisely and completely. **For section A-F limit to four pages.**

A. Project Intent (Check only one that best describes the project)

Institutional Capacity

- Improve the library workforce
- Improve the library's physical and technology infrastructure
- Improve library's operations

Information Access

- Improve users' ability to discover information
- Improve users' ability to obtain information resources

Lifelong Learning

- Improve users' formal education
- Improve users' general knowledge and skills

Human Services

- Improve users' ability to apply information that furthers their personal, family, or household finances
- Improve users' ability to apply information that furthers their personal or family health & wellness
- Improve users' ability to apply information that furthers their parenting and family skills

Employment & Economic Development

- Improve users' ability to use resources and apply information for employment support
- Improve users' ability to use and apply business resources

Civic engagement

- Improve users' ability to participate in their community
- Improve users' ability to participate in community conversation around topics of concern

B. Project Purpose – Short statement which answers the questions: we will do what, for whom, for what expected benefit(s).

The RCLStudio Pilot Program will add 3D printing technologies to library programs so that Riverside County teens gain exposure to and knowledge of STEM concepts, and experience in using this cutting edge technology.

C. Anticipated Project Outputs – Measures of services and/or products to be created/provided.

5 training sessions (3D printing, intellectual property issues, trademark/patent basics)
12 staff and volunteers trained
50 programs hosted
1000 program participants
85 new items added to the collection
1 STEM Activity Manual
1 set of recommended guidelines for teachers on using library makerspaces

D. Anticipated Project Outcome(s) – What change is expected in the target audience's skills, knowledge, behavior, attitude, and/or status/life condition? How will you measure these outcomes? (for examples see attachment B of the application instructions)

60% of the teen participants will have a greater understanding of 3D printing as it relates to science, technology, engineering, and mathematics. Participants will be surveyed at each program.

75% of staff and volunteers will have learned technical skills to complete this project and create new 3D printing programs. Participants will be surveyed at the beginning and end of the project year.

E. Briefly describe how this project will be financially supported in the future.

With a few experienced makers currently on staff, more library employees and volunteers will have gained the technical skills to show volunteers and other staff how to set up and use the equipment in more branches. We hope that Senator Robert Takano can help us gain corporate support for more equipment and supplies. Library staff will continue to seek grants and program sponsors. After the project year ends, staff will also look at developing adult programs as a possible way to generate revenues to underwrite the cost of printing supplies.

F. Activity Information. Activities are action(s) through which the intent or objective of a project are accomplished. Four activity types have been identified, each with select methods to help you describe how you will carry out this project. Indicate activity types that require a significant commitment of resources to the project (representing 10% or more of total project resources).

- I. **Instruction** - Involves an interaction for knowledge or skill transfer and how learning is delivered or experienced. *(Check all that apply and provide a description including whether the format will be in-person, virtual, or both)*
- Program - Formal interaction and active user engagement (e.g., a class on computer skills).
 - Presentation - Formal interaction and passive user engagement (e.g., an author's talk),
 - Consultation - Informal interaction with an individual or group of individuals (library staff or other professional) who provide expert advice or reference services to individuals, units, or organizations.

Description: Library staff receive training on using 3D printers, intellectual property rights, and patent/trademark basics. Library staff will in turn train volunteer program assistants as they are recruited. 3D printing training will be in person, and intellectual property training may be both in person and virtual. Library staff will demonstrate 3D printing for staff at the 2015 All Staff Development Day on Sept. 18. Library staff will also demonstrate 3D printing for the public at the V Annual Robot Expo and Star Wars Reads IV event at the Woodcrest Library (October date to be set). Library staff will design, publicize and host workshops and demonstrations for the public and staff, particularly during Teen Tech Week in March 2016. We also hope to get an engaging speaker from a STEM-supported industry for the teens.

- II. **Content** - Involves the acquisition, development, or transfer of information and how information is made accessible. *(Check all that apply and provide a description including whether the format will be physical, digital, or both)*
- Acquisition - Selecting, ordering, and receiving materials for library or archival collections by purchase, exchange, or gift, which may include budgeting and negotiating with outside agencies (i.e. publishers, vendors) to obtain resources. May also include procuring software or hardware for the purposes of storing and/or retrieving information or enabling the act of experiencing, manipulating, or otherwise interacting with an information resource.
 - Creation - Design or production of an information tool or resource (e.g., digital objects, curricula, manuals). Includes digitization or the process of converting data to digital format for processing by a computer.
 - Description - Apply standardized descriptive information and/or apply such information in a standardized format to items or groups of items in a collection for purposes of intellectual control, organization, and retrieval.
 - Lending - Provision of a library's resources and collections through the circulation of materials (general circulation, reserves). May also refer to the physical or electronic delivery of documents from a library collection to the residence or place of business of a library user, upon request.
 - Preservation - Effort that extends the life or use life of a living or non-living collection, the individual items or entities included in a collection, or a structure, building or site by reducing the likelihood or speed of deterioration.

Description: The Collection Development Librarian will order books and audiovisual materials on STEM and maker topics for the five RCLStudio libraries' collections. These materials will be in physical format. LMO staff and STEM Center staff will develop a set of recommended guidelines for teachers on using library makerspaces. Branch staff will create program outlines for teens for the STEM Activity Manual for library staff.

- III. **Planning & Evaluation** - Involves design, development, or assessment of operations, services, or resources and when information is collected, analyzed, and/or disseminated. *(Check all that apply and provide a description)*
- Retrospective - Research effort that involves historical assessments of the condition of a project, program, service, operation, resource and/or user group.
 - Prospective - Research effort that projects or forecasts a future condition of a project, program, service, operation, resource, and/or user group.

Description: The Library Administrator and Riverside County EDA staff will select the 5 hosting library sites, with at least one joint-use school/public library site. Library Management Office (LMO) staff will develop pre- and post-surveys for measuring the range of knowledge for volunteers and program participants. Branch staff and STEM Center staff will recruit volunteer program assistants, student groups, and teachers, to help with publicizing and hosting the programs. LMO staff will develop waivers for program participants and a 3D printing policy. LMO and branch staff will create publicity materials, including templates for print and online distribution (acknowledging the IMLS grant and the State Library), to be included in the STEM Activity Manual. Teen participants will be surveyed at each program. Staff and volunteers will be surveyed on the range of their technical and communications skills at the beginning and end of the grant period. LMO and branch staff will assess how to expand the RCLStudio to other groups.

IV. **Procurement** - Acquiring or leasing facilities; purchasing equipment/supplies, hardware/software, or other materials (not content) that support general library infrastructure. (*Provide a description*)

Description: IT staff and the Technology Librarian will select and purchase 2 models of 3D printers, along with laptops, 3Doodler pens, and filament supplies. After setup, the IT team will test and choose the most suitable models for the chosen branches, replacing and re-ordering as necessary.

ELEMENT 4: GRANT TIMELINE/ACTIVITIES (please see application instructions for additional information)

Show each major project activity and when it will be started and/or completed throughout the project. The timeline should correspond to the activities described in Planning and Evaluation. Please put an X in each pertaining month.

Activity	2015/2016											
	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June
IT team purchases and sets up equipment: 5 laptops & licenses	X	X	X	X								
IT team purchases and sets up equipment: 3D printers & supplies		X	X	X								
Library Administrator and Riverside County EDA staff selects the 5 hosting libraries.	X	X										
Library Management Office (LMO) staff develops pre- and post-surveys.	X	X										
Branch staff recruit volunteer program assistants.		X										
LMO staff develops waivers for program participants and 3D printing policy.	X	X										
LMO staff order books and AV materials.	X	X	X									
Branch staff and STEM Center staff recruits volunteers, student groups, & teachers.		X	X									
Volunteer program assistants are pre-surveyed on tech & communications skills.		X	X	X								
Library staff receive training on using 3D printers, intell prop rights, etc.		X	X	X	X							
LMO and STEM Center staff develop recommendations for teachers on lib'y m'spaces.		X	X	X								
Branch staff create program outlines for children, teens, and families.		X	X	X			X					
LMO and branch staff create publicity materials, including print/online templates.		X	X									
Library staff demonstrate 3D printing at the 2015 All Staff Development Day (9/18/15)			X									
Library staff demonstrate 3D printing at Woodcrest Library's V Annual Robot Expo.				X								
Library staff hold 2 programs at each host site and a program at two other libraries within the supervisorial district.					X	X	X	X	X	X	X	X
LMO & branch staff publicize RCLStudio programs through print/online media outlets.				X	X	X	X	X	X	X	X	X
Participants are surveyed at each program.				X	X	X	X	X	X	X	X	X
Volunteer program assistants are surveyed on technical and communication skills.											X	
Program evaluation and reporting, compile surveys, review outcomes												X

ELEMENT 5: BUDGET (please see application instructions for additional information)

The budget should clearly identify the amounts requested and from what sources. (please do not unlock the application form, if additional space is needed contact Mickie Potter at mickie.potter@library.ca.gov)

Budget Category	LSTA	Cash Contributions	In-Kind	Total
Salaries/Wages/Benefits				
5 Library Pages	\$1,000	\$0	\$0	\$1,000
5 Library Assistants / 10 Lib Assts + 5 Volunteer Progr Assts*	\$1,200	\$0	\$3643	\$4,843
5 Library Associates	\$0	\$0	\$1,500	\$1,500
5 Library Technicians	\$0	\$0	\$2,000	\$2,000
IT staff (1 technician, 1 web coordinator)	\$0	\$0	\$1,980	\$1,980
11 Librarians (admin, technology, coll. dev., zone & branch mgrs)	\$0	\$0	\$8,150	\$8,150
Subtotal	\$2,200	\$0	\$17,273	\$19,473

Description: IN-KIND: 5 Volunteer program assistants* = \$12.43/hr for 20hrs, 10 Library Assistants = \$12/hr for 20 hrs, 5 Library Associates = \$15/hr for 20 hrs, 5 Library Technicians = \$20/hr for 20 hrs, 1 Web Coordinator = \$33/hr for 10 hrs, 1 IT Technician = \$33/hr 50 hrs, 5 Librarians = \$25/hr for 20 hrs, 1 Coll. Development Librarian = \$25/hr for 10 hrs, 3 Zone Managers = \$36/hrs for 15 hrs, 1 Technology Librarian = \$33/hr for 60 hrs, 1 Deputy County Administrator = \$60/hr for 30 hrs

LSTA: 5 Library Pages = \$10/hr for 20 hrs, 5 Library Assistants for \$12/hr for 20 hrs

*Calculating the Economic Impact of Volunteers: <http://www.handsonnetwork.org/tools/volunteercalculator>

Equipment (\$5,000 or more per unit)				
	\$0	\$0	\$0	\$0
	\$0	\$0	\$0	\$0
Subtotal	\$0	\$0	\$0	\$0

Description:

Operating Expenses: Library Materials				
Teen nonfiction	\$1,640	\$0	\$0	\$1,640
Adult nonfiction	\$1,640	\$0	\$0	\$1,640
	\$0	\$0	\$0	\$0
Subtotal	\$3,280	\$0	\$0	\$3,280

Description: Books and/or audiovisual materials on maker and STEM topics will be added to the 5 library collections where the RCLStudios are hosted.

Operating Expenses: Consultant Fees				
	\$0	\$0	\$0	\$0
	\$0	\$0	\$0	\$0
	\$0	\$0	\$0	\$0
	\$0	\$0	\$0	\$0
	\$0	\$0	\$0	\$0
	\$0	\$0	\$0	\$0
Subtotal	\$0	\$0	\$0	\$0

Description:

Budget Category	LSTA	Cash Contributions	In-Kind	Total (B+C+D = E)
Operating Expenses: Travel				
	\$0	\$0	\$0	\$0
	\$0	\$0	\$0	\$0
	\$0	\$0	\$0	\$0
	\$0	\$0	\$0	\$0
	\$0	\$0	\$0	\$0
Subtotal	\$0	\$0	\$0	\$0

Description:

Operating Expenses: Supplies/Other				
5 3D printers	\$10,625	\$0	\$0	\$10,625
5 laptops and software licenses	\$8,500	\$0	\$0	\$8,500
Filament bundles	\$5,780	\$0	\$0	\$5,780
10 3Doodler pens	\$990	\$0	\$0	\$990
5 spare extruders	\$875	\$0	\$0	\$875
Storage cases and carts for transport	\$1,250	\$0	\$0	\$1,250
Subtotal	\$28,020	\$0	\$0	\$28,020

Description: The \$10,625 is based on a MakerBot quotation for 1 Replicator Desktop 3D Printer-Fifth Generation Model (\$2899) and 4 Replicator Mini Compact (\$1,375 each) , plus service plans (\$950), shipping (\$370), and tax (\$906 for all Makerbot, including spare extruders). However, due to feedback from schools and other libraries, we are considering other models such as Ultimaker and Cube. The \$8,500 covers 5 Dell laptops (Latitude 14 7000 Series E7450 or similar) and software licenses for MS Office and CAD. Filament is also from a MakerBot quotation of 6 large 10-pack (\$430 each) and 20 small 10-pack (\$160 each).

Operating Expenses: Contracted Services				
Staff training sessions	\$2,000	\$0	\$0	\$2,000
Public presenters	\$1,000	\$0	\$0	\$1,000
	\$0	\$0	\$0	\$0
	\$0	\$0	\$0	\$0
	\$0	\$0	\$0	\$0
	\$0	\$0	\$0	\$0
Subtotal	\$3,000	\$0	\$0	\$3,000

Description: Staff training sessions on 3D printing, intellectual property, copyright and trademark basics. Local makerspace Vocademy offers classes in 3D printing and CAD (\$148 per seat, including printing materials). 12 trainees X \$148 per seat = \$1776. \$224 will be for training on intellectual property/copyright. We are still looking for classes on intellectual property issues. We are also following up with and seeking exciting speaker(s) to talk about how STEM concepts are used in their work (e.g., computer animation, medical applications), preferably at least one presentation in each of the 5 supervisorial districts or in the 3 library zones.

Project Total	\$36,500	\$0	\$17,273	\$53,773
Indirect Cost Rate Applied 0 % Indirect Cost	\$0	\$0	\$0	\$0

Check one: (please see application instructions for additional information)

No Indirect Federally negotiated indirect cost rate * Indirect proposed cost rate *

* please attach supporting documentation if required

Description:

Grand Total	\$36,500	\$0	\$17,273	\$53,773
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ELEMENT 6: ATTACHMENTS (please see application instructions for additional information)

If you have additional resources that support your grant, please attach after this page

ELEMENT 7: INTERNET CERTIFICATION FOR APPLICANT PUBLIC LIBRARIES FY 2015/16

(please see application instructions for additional information)

As the duly authorized representative of the applicant public library, public elementary school library or public secondary school library applying for LSTA funding, I hereby certify that the library is (*check only one of the following boxes*)

A. An individual applicant that is CIPA compliant.

The applicant library, as a public library, a public elementary school library or public secondary school library, has complied with the requirements of Section 9134(f)(1) of the Library Services and Technology Act.

B. Representing a group of applicants. Those applicants that are subject to CIPA requirements have certified they are CIPA compliant.

All public libraries, public elementary school libraries, and public secondary school libraries, participating in the application have complied with the requirements of Section 9134(f)(1) of the Library Services and Technology Act. The library submitting this application has collected Internet Safety Certifications from all other applicants who are subject to CIPA requirements. The library will keep these certifications on file with other application materials, and if awarded funds, with other project records.

C. Not Subject to CIPA Requirements.

The CIPA requirements do not apply because no funds made available under this LSTA grant program will be used to purchase computers used to access the Internet or to pay for direct costs associated with accessing the Internet.

Riverside County Library System
Library/Organization

RCLStudios Pilot Project: Introducing STEM via 3D Printing
Project Name

Barbara Howison
Library Director Name

Library Administrator
Title

Library Director Signature

Date