Request for Proposals

Creating a Ready to Code Toolkit By Libraries, For Libraries

July - August 2017

Overview

Libraries Ready to Code is an initiative of the American Library Association's (ALA) Office for Information Technology Policy (OITP) and sponsored by Google, which aims to ensure libraries have the resources, capacity, and inspiration to embrace activities that promote computational thinking (CT) and computer science (CS) among our nation's youth.

ALA is accepting grant proposals of up to $25,000 to join a cohort of libraries that will collaboratively develop a "Ready to Code" toolkit with the goal of enabling any library, regardless of geography, expertise, or affluence to deliver programming that promotes computer science and computational thinking among youth. The American Association of School Librarians (AASL), Association of Library Service to Children (ALSC), and the Young Adult Library Services Association (YALSA) are collaborators with OITP in this project under the Libraries Ready to Code initiative. YALSA is the administrator of this grant program.

Background

OITP and Google's collaboration on Libraries Ready to Code (RTC) was initiated in 2015 with Phase I: Increasing CS Opportunities for Young People and continuing in 2016 with Phase II: Embedding RtC Concepts in LIS Curricula. RTC Phase I found that in order to effectively implement CS education activities, libraries need funding, expertise, professional development, and data to inform their ongoing work. Through grant funding for CT-based programs, this RFP, Phase III, is intended to address these needs.

What is "Ready to Code"

The Libraries Ready to Code initiative is about more than teaching youth how to program a piece of software. Knowing how to code requires computational thinking skills and an understanding of how to troubleshoot, problem solve, and think critically. It requires trial and error, instituting iterative processes, collaboration, and reflection. When a young person learns to code they learn how to persist, and gain confidence in what they are able to achieve.

Definitions of CT and CS used in this initiative and for this RFP are:

- **Computational Thinking (CT)**. Computational thinking refers to a set of problem-solving and automation skills foundational to computer science though also transferable to many fields and applicable to college and career readiness. It is a way of analyzing and breaking down problems into solvable units, using the power of computing to solve those problems, and processing information and creating connections to transform data into understanding.
- **Computer Science (CS)**. Computer science is the study of computers and algorithmic processes, including principles, their hardware and software designs, applications, and impact on society (Based on Computer Science Teachers Association definition). Computer Science is *not* computer literacy or how to use a computer for functions like word processing

RTC emphasizes practices and strategies that our Phase 1 data found to be successful for implementing CT/CS program in libraries. Successful applicants will demonstrate integration of these concepts into their project proposal.

- **Connected Learning.** Centers on the idea that for youth to have beneficial learning experiences, those experiences have to be tied to passions and interests, create possibilities to learn and work with others, and create potential to connect interest learning to future opportunities.

- **Outcomes Planning.** Knowing what are the benefits of activities along with being able to articulate those to colleagues, administrators, stakeholders, community partners, policy makers, and elected officials.
- **Youth Voice.** Providing youth the opportunity to have a say in the structure and focus of activities.
- **Design Thinking.** Following a process that allows for designing programs that solve a singular or community problem and that incorporates research, empathy, prototyping, testing, reflection, and iteration.
- **Community Engagement.** Working with community partners to design and implement activities enables libraries to bring in experts that support youth's specific connected learning needs and interests and demonstrate the role the library has in supporting CT/CS for and with youth.

Objectives

Selected partners will comprise a cohort of approximately 25-50 libraries (depending on funding requests) to design and implement youth coding programs that incorporate RTC concepts and foster computational thinking skills. Alongside of implementing these programs, the library cohort will help develop, pilot, and rapidly iterate a toolkit that will consist of:

1. A selection of CS resources that librarians and library staff determine are most useful for facilitating CT and CS programs.
2. An implementation guide that will accompany the resources to guide other libraries, regardless of computer science expertise, geography, or affluence, in effectively using the resources in their context.

The result is a toolkit developed by libraries, for libraries that will build the capacity of librarians and library staff to facilitate rich learning programs for youth.

Participation & Expectations

Participating libraries and staff will be expected to:

- Implement a CT and/or CS program that integrates Ready to Code concepts within the program timeframe (detailed below)
- Provide feedback on selection of CT and CS resources provided by the ALA and Google, as well as those the cohort may already be using
- Participate in an ongoing (virtual) community of practice to share knowledge among the cohort, and ongoing RTC evaluation to collect data (via surveys, discussions, and interviews) in order to create an implementation guide
- You are *not* expected to be a computer scientist or have a technical background

In return, the program provide:

- **Financial support**: up to $25,000 in funding
- **Operational support**: Google will provide ongoing consultation on CS/CT program implementation if desired
- **Community of practice**: a facilitated community to connect peers and build leadership
- **Visibility**: this is a high profile program that will help solidify your reputation as a library that is "ready to code" with the option of becoming an RTC ambassador at the end of the program

Budget and timeline information

Libraries can apply for up to $25,000 of funding for costs associated with participating in one year of this program according to the following approximate timeline:

- **July 20 - August 31 2017**: Application Period
- **October 2017**: Award notification

- **November 2017 - January 2018**: Pilot period
- **February 2018**: Initial findings (beta toolkit) shared with the cohort
- **February-March 2018**: Iteration and refinements
- **April 2018**: Toolkit released to coincide with National Library Week
- **April - September 2018**: Community of practice continues to meet throughout implementation of the final toolkit
- **June 2018**: (Optional) participation in Ready to Code activities at ALA Annual
- **September 30, 2018:** grant requirements are completed
- **October 2018**: Final reports due

Review and selection process

Selection criteria is aligned with the Ready to Code vision that libraries play a critical role in increasing access and exposure to CS opportunity, changing perceptions of who can code, and inspiring all youth to pursue CS education by connecting coding to individual interests.

The selection committee will consist of two representatives from OITP as well as librarians from ALA's three youth divisions: The Association for Library Service to Children (ALSC), The American Association of School Librarians (AASL), the Young Adult Library Services Association (YALSA). YALSA will administer the grant program.

Applications will be selected based on a standard rubric that is directly connected to the following components:

1. **Basic eligibility**: All applications will need verify the following
    a. **U.S. libraries.** This opportunity is available to libraries located in the U.S. and U.S. territories.
    b. **Focus on CS and CT.** Proposals must focus on computer science and/or computational thinking as defined above. Prior experience implementing a CT/CS program is not necessarily required, but you will need to make the case for why your experience is transferable and you have implemented the Ready to Code concepts with similar programs.
    c. **Pre-K through 12 grade children and youth**. Proposals should benefit children and youth through high school. This program is not intended for post-high school age adults or students already enrolled in university.
    d. **No cost**. Programs cannot require youth to pay a fee or a deposit for participation.
    e. **Leadership approval**. Applications must include confirmation of approval from library administration upon request.
2. **Ready to Code concepts**: All libraries selected will demonstrate in their proposal an understanding of and ability to integrate Ready to Code concepts, listed below, in their proposed activity, either from experience implementing a CT or CS program that incorporate these concepts, or evidence from similar programs.
    a. **Connected Learning**. The proposed program connects CT/CS to the interests of the participants, creates possibilities to learn and work with others, and connects to future learning opportunities.
    b. **Outcomes Planning**. The proposed program includes goals and objectives that can be measured, a clear case for what the program will achieve, and the benefits of the program can be articulated to youth, administrators, stakeholders, community partners, policy makers, or elected officials.
    c. **Youth Voice**. The proposed program involves youth in the design and implementation of activities.
    d. **Design Thinking**. The proposed program is connected to a compelling problem and was created in a way that incorporates research, empathy, reflection, and iteration.

    e. **Community Engagement**. The proposed program includes community partners to design and/or implement activities.

3. **Selection preferences:** Once the above application components are evaluated, consideration will be given to the below preferences in order to create a toolkit that is useful to libraries across the country and can be scaled broadly:
    a. **Addressing inequity**. Applicants that can provide insight programs that serve students who might not otherwise have access CS and CT programs, including those that are underrepresented in the field of computer science such as girls, and youth from underrepresented groups, low-income households, or rural communities.
    b. **Geography.** It is our intent to select a cohort of libraries to represent geographic diversity in the U.S.
    c. **Types of libraries and program models**.
    d. **Current ALA members**.

How to apply

Include link

Additional background

With 500,000 current job openings in the field of computer science, all 115,000 of the nation's school and public libraries are crucial community partners to guarantee youth have skills essential to future employment and civic participation. Yet students face challenges in accessing quality CT/CS programs, and there is a shortage of educators with the right tools and materials to teach CT/CS:

- **The formal education system is not preparing all students with the skills they need.** Only 40% of U.S. K-12 schools offer CS with programming/coding; 9% of U.S. K-12 schools offer AP CS; and Black students are 23% less likely than White students to have CS classes in schools.
- **Underrepresented groups face barriers to entering, and staying in, careers involving computer science.** 2016 workforce data show that 8% of computing jobs were held by Blacks/African Americans, 7% by Hispanics/Latinos, and 24% by women.
- **It is difficult for educators to find the right resources.** It can be overwhelming and onerous to sift through existing CS education resources, especially for educators who have limited experience or are just starting a program.

Opportunities to provide CT/CS in libraries:

- **Libraries already play a central role in access to technology.** Close to 90% of libraries offer basic digital literacy training; 96% of the population expects libraries to be providers of digital learning; 66% of libraries have STEM efforts underway or are planning to implement them; and 98% of libraries provide free WiFi.
- **Libraries support workforce development, especially in low-SES communities.** Compared with 19% of all library users age 16+, Hispanics (34%), Blacks (28%), and low-SES households (26%) are likelier to say libraries "help a lot" with job search or workforce skills.
- **Libraries serve the communities, families, and youth we seek to benefit.** 96% of the U.S. population lives in an area served by a library, though lower-income adults are more likely find their services important and parents are significantly more likely to visit them.