

*Public Partners for Middle School STEM* is a 24-month National Leadership project grant designed to build community anchor partnerships that result in increased STEM learning programs designed to engage low-income middle school youth. The [Urban Libraries Council](#) (ULC) is the lead agency on this grant, which includes \$444,400 requested from IMLS and a total budget of \$888,800.

**Statement of National Need:** The United States' economy is seeing rapid growth in the number of STEM-related jobs at the same time that it is facing diminishing numbers of qualified STEM professionals. The middle school years have emerged as a critical time to address this "leaky STEM pipeline," since youth experience both a [surge in brain development](#)<sup>1</sup> and an exposure to subjects that influence their pursuits in high school, college and their careers.<sup>23</sup> Building on a recent report<sup>4</sup> that highlights [public libraries' role in promoting STEM equity](#), there is an opportunity for public libraries to build on their experience in science/technology programming for teens<sup>56</sup> and ensure they also provide related programs for "tweens," especially those from low-income communities. By partnering with schools, libraries can better target and deliver programs that complement classroom learning and develop 21<sup>st</sup> century skills. Emerging examples of public library middle school STEM partnerships include the [3-D Research and Design Class](#) provided by Arlington Heights Memorial Library (Illinois) in partnership with a local middle school and [DevCamp](#) at Denver Public Library where youth work with professional mentors to learn basic web development.

### **Project Performance Goals:**

- Identify emerging trends and replicable strategies for library STEM learning programs for middle school youth, (ages 10-14) especially those from low-income communities.
- Support the development of pilot library-school partnerships that implement complementary STEM learning programs and document key learnings and practices to inform the field.
- Produce practical tools and resources to be used broadly by library leaders and school partners to both increase engagement of middle school youth in STEM and raise national awareness.

### **Project Design and Timeline:**

ULC will partner with [Science-Technology Activities and Resources for Libraries](#) (*STAR\_Net*) at the Space Science Institute as the lead expert STEM consultant to complete major activities on this 24-month project:

- **A National Scan** designed to identify emerging trends and replicable strategies for library STEM learning programs for middle school youth. Information will be gathered from libraries about their programs, how they work with schools, museums and other partners to engage at-risk youth and develop, deliver and assess STEM learning activities. Strategies and trends identified will be the basis for the development of pilot projects, resources and tools. (May – October 2018)
- **Steering Committee on Library-School Partners for STEM** designed to further identify and inform effective strategies for collaborative school-library STEM learning activities and also raise national awareness with key strategic partners. Invited organizations: Afterschool Alliance, the Council of the Great City Schools, Digital Promise, the National League of Cities, the National Summer Learning Association, YALSA and library leaders in STEM education. (July 2018)
- **Public Library Pilots:** A cohort of six diverse public libraries will be selected through an open call for applications through ULC, library organizations and STAR\_Net's network of librarians interested in

<sup>1</sup>[Lorain, Peter, NEA Articles and Resources](#)

<sup>2</sup>[Maltese et al., 2014](#)

<sup>3</sup>[Afterschool Alliance, 2010](#)

<sup>4</sup>[Shtivelband, Wallander Roberts and Jakubowski, 2016](#)

<sup>5</sup>[YALSA, 2014](#)

<sup>6</sup>[ASTC, IMLS, MacArthur Foundation, ULC, 2014](#)

STEM. Public libraries selected will be part of an 18-month peer learning cohort that will pilot strategies identified through the scan, including activities that strengthen school partnerships, reach low-income middle school youth, develop 21<sup>st</sup> century skills and complement classroom learning. Pilot sites will receive ongoing support to build partnerships, design active STEM learning programs for middle school outcomes and align resources with curriculum. (September 2018 – February 2020)

- **National Resources:** This project will result in new resources for the library and its partners.
  - **Online Resource Guide:** Based on the work of the pilots and national scan, a resource guide will be created on library STEM learning programs for middle school youth with strategies to complement classroom learning and engage low-income students. The guide will be designed for library practitioners and their local partners and include case studies of pilot projects, as well as existing (NSF, IMLS, STAR-net) and new resources for STEM education. (Launch March 2019)
  - **Webinar Series:** Designed for library-school partners to adopt strategies from the online guide, the webinars will feature experts and pilot site leaders. (September 2018 – April 2020)
  - **National Report:** Issued jointly by ULC and the organizations represented by the steering committee, the report will inform policy and decision makers and will highlight the opportunity and impact of library-school partnerships for middle school STEM education. (March 2020)
  - **Communications and Dissemination:** ULC will disseminate all resources in partnership with STAR\_Net and steering committee member organizations. Workshops will also be planned and presented at four to six national conferences.

**National Impact and Project Evaluation:** This project will strengthen pilot cohort public libraries in their capacity to reach low-income middle school youth with active STEM learning programs that build their awareness of and interest in STEM college/career choices. An evaluation, designed by Christine Becker & Associates, will assess the effectiveness of project performance goals, including dissemination and replication of the tools and resources by the larger library field.

**Lead Agency:** With the help of our members, ULC initiatives strategically advance the value that 21<sup>st</sup> century libraries provide communities in critical areas such as social equity, education and lifelong learning. ULC brings experience with 1) [building school-library partnerships](#) 2) [creating resources for STEM summer learning](#) and 3) [strategies to reach low income children](#). ULC's track record of convening national organizations and shaping critical conversation is directly complemented by STAR\_Net's expertise with STEM education including [Implementing Effective STEM Programming in Libraries](#).

**Key Project Staff and Consultants:** ULC's Director of Education and Learning Initiatives will develop the national scan, online toolkit and manage consultants, steering committee, pilot selection and peer-learning cohort. A project manager will support peer learning, dissemination, communications and logistics. *STAR\_Net* will coach pilots and their partners and advise the development of national resources.

**Budget:** The budget includes **\$444,400 requested from IMLS** for

- Salaries and benefits dedicated to this project for a director (.25 FTE) and a project manager (.25 FTE) for 24 months (\$133,500).
- Consultants including *STAR\_Net*, a professional writer, graphic design and evaluation (\$132,500).
- Travel for participating libraries (in-person trainings) and in-person coaching/site visits (\$48,000).
- Pilot awards of up to \$15,000 for pilot implementation materials (\$90,000).
- A 10 percent indirect cost rate (\$40,400).

Match includes support from ULC's executive leadership and communications professionals, cost of in-person trainings, steering committee commitment and personnel time from participating pilot libraries.