

**FULL PROPOSAL ABSTRACT, NARRATIVE, AND
SCHEDULE OF COMPLETION**

ABSTRACT

Innovation is the very essence of the American spirit, requiring a combination of effective inquiry, problem-solving, and creative thinking skills, mixed with the curiosity and perseverance for seeking viable solutions to problems. While all children have creative potential, often their innovative behaviors thrive and endure only if supported and nurtured. With today's emphasis in schools on rigid curricula, standards, and testing, it becomes increasingly more likely that students will develop a "good enough" mentality where they no longer stretch their imaginations, act on their curiosity to seek answers to questions that go beyond the curriculum, or allow themselves to explore perplexing issues that pique their curiosity. This two-year IMLS National Leadership Project Grant: Learning Spaces in Libraries project seeks to build a multi-faceted resource for school librarians to transform their libraries into "innovation spaces" and to expand their capacity to serve as "innovation mentors" to students who lack adult mentors to encourage and guide their innovative activities.

This project partners Syracuse University's Center for Digital Literacy as lead applicant (instructional/motivation experts/researchers) with By Kids For Kids, the Connecticut Invention Convention, Brooklyn-On-Tech and Time2Invent (local, state-wide and national organizations that sponsor and support in- and out-of-school innovation programs and events for K-12 students), and collaborators including mentoring and web development consultants, 96 school librarians and students (grades 4-8) (lesson planning, iterative testing), and OCLC's *WebJunction* (dissemination). Together, they will create a unique, free and accessible website, *The Innovation Destination*, containing a collection of existing and original resources and training for use by elementary and middle school librarians to stimulate and support their students' (grades 4-8) creative thinking and innovative behaviors. While its target audience is school librarians, this project's resources also will be useful by classroom teachers, youth librarians, museum educators, parents and students, in school and at home

The Innovation Destination will contain a variety of 4-8th grade level, standards-based, STEM-integrated, accessible and inclusive learning resources (e.g., curricula, lesson plans, activities, relevant web links, pathfinders, learning games, bibliographies, research articles), designed using an iterative design approach and based on an integration of Stripling's *Inquiry Model*, Paul & Elder's *Critical Thinking Framework*, and Keller's *ARCS Model of Motivational Design*. These resources will support the use of the site's centerpiece resource, *KidsClips*, a searchable database of hundreds of originally-produced and edited video interviews with successful young innovators who provide their insights into the innovation process and serve as role models to the students who view them. The project's intended outcomes are that school librarians will (1) recognize the importance of motivating and supporting student innovation by creating *innovation spaces* within their libraries; (2) report the intention to integrate *The Innovation Destination's* network of resources into their programs; (3) demonstrate knowledge and skills for being *innovation mentors* to students in their schools; and (4) report increased student interest in innovation resources and activities. In addition, the library profession will recognize the importance of the role of school libraries as innovation spaces and of school librarians as innovation mentors.

This project also will produce professional development Webinars and an online training module (located within *The Innovation Destination* site) for school librarians who wish to serve as "innovation mentors" to students in their schools, particularly those who do not have such adult mentors to encourage and guide their innovative activities. Free access to these resources will be provided using a three-pronged approach: directly through *The Innovation Destination*, through the popular, well-established *S.O.S. for Information Literacy* website (<http://informationliteracy.org>) where the collection will be housed, and via *WebJunction's* learning community website's catalog of professional development programs and resources. A variety of methods will be used to collect evaluation data (e.g., online survey, email interviews, site statistics) and to disseminate information about the project and its deliverables (e.g., professional publications, conference presentations, social media, and websites including *WebJunction*).

School Libraries as Innovation Spaces, School Librarians as Innovation Mentors: Stimulating Students' Curiosity, Inquiry and Innovative Thinking

Librarians who create innovation spaces in school libraries spark creative energies and empower students to build, invent, collaborate, question, solve problems, and envision a future that doesn't yet exist.--- Barbara Stripling, 2014-15 ALA President

1.0 INTRODUCTION

Innovation is the very essence of the American spirit, requiring a combination of effective inquiry, problem-solving, and creative thinking skills, mixed with the curiosity and perseverance for seeking viable solutions to problems. While all children have creative potential, often their innovative behaviors thrive and endure only if supported and nurtured. With today's emphasis in schools on rigid curricula, standards, and testing, it becomes increasingly more likely that students will develop a "good enough" mentality where they no longer stretch their imaginations, act on their curiosity to seek answers to questions that go beyond the curriculum, or allow themselves to explore perplexing issues that pique their interest (Small, 2014).

This two-year IMLS National Leadership Project Grant: Learning Spaces in Libraries project (start date: Dec. 1, 2015) will develop (1) a unique and innovative collection of resource for students in grades 4-8, containing librarian-created lesson plans, young innovator videos and participatory learning activities and (2) innovation mentoring training for school librarians that stimulate and inspire the curiosity, interest and inquiry of *all* students. This project partners Syracuse University's Center for Digital Literacy (aka CDL) as lead agency (instructional/ motivation experts/researchers) with By Kids For Kids, the Connecticut Invention Convention, Brooklyn-On-Tech and Time2Invent (local, state-wide and national organizations that sponsor and support in- and out-of-school innovation programs and events for K-12 students) and OCLC's *WebJunction* as collaborator on dissemination (see Appendix B: *Letters of Commitment*). The team, together with the project's mentoring expert, Web developer, and 96 participating school librarians and students nationwide, will create and pilot (through iterative testing) a cohesive network of innovative, free, and accessible electronic resources known collectively as "The Innovation Destination," to support and expand librarians' capacity for transforming their libraries into creative spaces where children are free to explore and experiment, learn that failure isn't the end, and follow their passion (Compton, 2014). Project deliverables will be hosted on the IMLS-funded *S.O.S. for Information Literacy* website (<http://informationliteracy.org>), 2009 AASL Best Website for Teaching & Learning, containing 1000+ standards-based, K-16 curriculum-integrated lesson plans and teaching ideas. Since its funding ended in 2010, *S.O.S.* has had 2.3 million visitors and 2144 new registrants.

This project addresses the ***Learning Spaces in Libraries project category*** and its 10 issues: (1) *creating partnerships and communities of practice for practitioners across fields* (thru partnering with innovation organizations and creating a community of practice of school librarians as innovation mentors); (2) *supporting a cultural shift away from passive service models to proactive, anticipatory and engaged user service models* (*The Innovation Destination* site will be a major resource for creating library-based programs for young innovators); (3) *designing, developing, testing, and sharing informal learning curricula* (iterative design of teaching/learning resources); *building STEM learning opportunities for at-risk youth* (young innovators from underserved populations as *KidsClips* role models); *building bridges to national learning standards or other formal curricula* (Next Generation Science and 21st Century Learning standards); *developing replicable models for community engagement, mentorship, and partnerships* (strong project partnerships and mentoring training); *defining strategies to increase libraries' relationships and collaborations with education partners in other formal and/or informal settings* (builds on existing relationships between university faculty, innovation organizations, school librarians); *increasing national and local awareness of library importance in informal learning conversations* (communication plan); *using libraries to increase STEM literacies* (integrating Next Generation Science standards-based teaching and inquiry learning); and *improving methodologies for measuring the impact of these service models* (multi-method iterative testing/evaluation).

2.0 BACKGROUND

Innovative thinking encompasses life skills such as creativity, curiosity, self-direction, risk-taking, and higher-order thinking processes (including inquiry and information problem-solving), essential skills for success in both an information-based society and a technological workplace (Mayrath, Clarke-Midura & Robinson, 2006).

The innovative person is one with a high level of curiosity who can look at problems in new and different ways, can ask the right questions to generate a variety of solutions, and enjoys challenges.

Over the past three decades, there has been evidence of steady erosion of investment in the kind of brainpower that keeps our nation competitive and a subsequent decline in the curiosity, ingenuity and inventiveness of American entrepreneurship (Goldenberg et al, 2003). With the shift of K-12 education's attention toward meeting standards, rigid curricula and continual testing, there has been little time for classroom teachers to teach the skills their students need to effectively act on their curiosity and imaginations.

For libraries, the incorporation of innovation-based programs and activities is a relatively new direction. Over the past few years, public libraries have led the way in this area, often through transformation of library spaces into collaborative, common learning areas (e.g., community makerspaces, business incubators for entrepreneurs), housing a variety of cutting-edge technologies (e.g., 3-D printers, robots), resources (U.S. Patent Office invention database), and programs (e.g., coding clubs) where their constituents can imagine, create, produce and learn (InnovationInLibraries.com, 2013; Hildreth, 2012). School libraries must join this effort.

2.1 Children as Innovators. Arnone & Small (2013) find that curiosity is critical to intellectual development, creativity, and problem-solving activities. Stimulating children's curiosity and inquiry for exploring their environment, asking questions, thinking critically, and resolving problems creates a powerful catalyst for human creativity and investigation, particularly for STEM (Science, Technology, Engineering, Math) related problems (Small, et al., 2011). "It is the curious, inquisitive child that becomes tomorrow's innovator -- discovering a cure for a disease, creating a technology for harnessing low-cost, alternative, eco-friendly energies, developing a service that increases independence for people with disabilities" (Arnone, et al., 2011, p. 195). There are many examples of innovations driven by youngsters' curiosity and innovative behaviors, created for the sole purpose of improving the world. For example, at age 10, Rebecca Schroeder invented a way for doctors to read patients' hospital notes in the dark (so as not to wake them) and at age six, Spencer Whale invented a toy car with built-in IV so that kids in hospitals could play and be more mobile. More famously, 14-year-old Philo Farnsworth invented the first electronic television, and, at 15, Louis Braille invented his tactile reading/writing system, opening up a world of information for people with vision disabilities (Weiss, 2011).

In studying the role school libraries and librarians currently play in supporting innovation activities in their schools, Small (2014) found that even though they demonstrate a lack of well-developed inquiry and critical thinking skills essential during the innovation process, young innovators often perceive libraries and librarians as marginal to their innovation activities. The proposed project addresses the lack of competence in skills needed to be successful innovators, offering school librarians a unique and innovative set of learning resources that they can use to create *innovation spaces* within their libraries that motivate, build, reinforce and mentor students' inquiry and innovative thinking skills and behaviors. .

2.2 Teaching Inquiry and Critical Thinking Skills for Innovation. Inquiry-based learning involves formulating and articulating questions and problems, gathering evidence, synthesizing and explaining gathered evidence, and using the explanation to resolve the question/problem. We propose to create a multi-faceted web resource, based on a three-pronged theoretical approach (inquiry-based learning, critical thinking, motivation), integrating three design/learning models: Stripling's Model of Inquiry, Paul & Elder's Critical Thinking Framework, and Keller's ARCS Model of Motivational Design that incorporate several powerful educational theories (e.g., constructivism, experiential learning, intrinsic motivation)

Stripling (e.g., 2008; 2010) created a model that specifies six active and recursive phases of the inquiry process readily applicable to the innovation process, including: **Connect** (identifying a problem or phenomenon to be explored), **Wonder** (formulating clear and precise questions about a problem), **Investigate** (gathering and assessing information about the problem to explore abstract ideas for creating potential solutions to the problem), **Construct** (synthesizing what *is* with what *could be*), **Express** (creating new, creative solutions to the problem), and **Reflect** (reviewing what was learned and formulating new questions about the problem/solution).

Paul and Elder (2010) created a Critical Thinking Framework whose essential characteristics appear to complement Stripling's six phases, as well as support innovative thinking and behaviors. They are:

- Raises vital questions/problems, formulating them clearly and precisely (**Connect, Wonder**)

- Gathers/assesses/interprets relevant information/ideas (**Investigate**)
- Comes to well-reasoned conclusions/solutions, tests them using relevant criteria (**Construct**)
- Thinks open-mindedly within alternative systems of thought, recognizing and assessing, as need be, their assumptions, implications, and practical consequences; and (**Construct, Reflect**)
- Communicates effectively with others, figures out solutions to complex problems (**Express**)

Keller's ARCS Model of Motivation (e.g., 1987) considers instruction design through the lens of four motivational factors, applied throughout the innovation process: **Attention** (arousing and sustaining attention and interest), **Relevance** (highlighting the importance and value of the learning), **Confidence** (building self-confidence through competence) and **Satisfaction** (providing opportunities for successful learning). An integration of all three models will be applied to the design of instructional components within the proposed project. Together, these three models provide the framework for the design of this project's deliverables.

2.3 Providing Guidance, Support and Motivation. In their literature review, Martins and Terblanche (2003) sought to identify factors in an organizational culture that influence the stimulation of creativity and innovation. They found these five determinants: (1) structure (promotion of autonomy, flexibility, and collaboration as opposed to rigidity, control, and predictability), (2) an innovative overall strategy (e.g., as part of the school's or library's vision), (3) support mechanisms (e.g., recognition, availability of resources such as time, information, technology, and other creative people), (4) behavior that encourages innovation (e.g., generation of new ideas, tolerance for mistakes, innovation mentoring), and (5) open communication (transparent, based on trust).

Research indicates that the skills, attitudes and behaviors underlying innovation can and should be encouraged and even taught (e.g., Amabile, 1989). Unfortunately, creative youngsters often cannot depend on their classroom teachers to stimulate and support their creative ideas; rather, teachers often express disapproval and even dislike of such students (Cropley and Cropley 2013), even though Small (2014) found that young innovator participants (grades 4-8) depend on adult mentors to guide and support their innovation activities. Small's research also discovered that although most young innovators have poorly developed inquiry skills, they rank librarians as innovation mentors lowest, with parents, teachers, and grandparents highest. Small's study also revealed that few young innovators who participate in innovation activities in their schools and communities come from underrepresented populations (e.g., minorities, students with disabilities), potentially lacking adults to serve as innovation mentors to support and encourage their participation at home or school. "For every child who is encouraged to think creatively and participate in innovation activities and guided and supported along the way, there are many more with exciting, valuable ideas who do not receive such mentoring" (Small, 2014, p.19). Both a lack of (1) adult innovation mentors to guide/encourage students who lack the skills, confidence and support to be creative and innovative and (2) student competence in essential inquiry and critical thinking skills required for successful innovation are addressed in the proposed project.

3.0 STATEMENT OF NEED

Beyond skills, 21st century jobs require creativity and innovation, two qualities our testing-obsessed U.S. schools typically do not consider as educational priorities (Boss, 2012). While our schools have been focused mainly on curriculum, standards, and assessment, many American businesses have turned their attention to creating organizational "play spaces" to address the continuing decline in the imagination, curiosity, ingenuity, and inventiveness of their employees, particularly those in the STEM areas (Goldenberg et al., 2003). These play spaces are intended to stimulate employees' creativity thinking and behaviors resulting in the development of innovative new services and products for consumers.

A recent online survey, conducted at the library at Miami University of Ohio, found that, of the 143 respondents, 51% of public librarian respondents and 36% of academic librarian respondents reported having "makerspaces" in their libraries, while *only 9% of school librarian respondents* reported such activities. Only recently, with the Common Core standards' emphasis on critical thinking and problem solving and the importance of nonfiction reading materials, combined with the integration of science, engineering and technology in the K-12 Next Generation Science curriculum standards, are schools (and school librarians) beginning to recognize the importance of libraries as innovation spaces where students can question, collaborate, research, design and create using high level skills, a variety of rich resources, and their

imaginations. For example, a high school library in Albemarle County, Virginia has become the “hub” of the school, transforming part of its facility into a combination music studio and programming lab with 3-D printers and other creative technologies where students both consume and produce information (NBC29.com, 2013).

In the past six months, there have been 60+ posts on LM_NET (school librarians’ listserv) about creating makerspaces (LM_NET Archives, 2014-15). Typically, these maker spaces focus on providing new and emerging technologies (e.g., 3-D printers, robots) in order to stimulate ideas and innovation. Loertscher, Preddy & Derry (2013) describe makerspaces in school libraries as places where “patrons take command of their own learning with the potential for demonstrating entrepreneurial behavior” (p.1). However, while makerspaces can provide a catalyst for idea generation, creative “tinkering” and experimentation, they are insufficient for ensuring that libraries provide the type of flexible learning environments where *all* students can develop the skills and motivation (and receive the support needed) to explore, take risks, and pursue their innovative ideas. School librarians are less limited by rigid curriculum and testing constraints and have opportunities to collaborate with other educators, opening up students’ minds to not only what is but what could be (Small, 2014). The proposed project seeks to provide school librarians with the knowledge and tools needed to create learning environments that serve a central role as both a physical and emotional space in which students’ imaginations, creativity, and sense of wonder are nourished and expanded. School librarians can serve as role models and mentors to help students to (1) feel comfortable and free to ask divergent (and sometimes outrageous) questions, (2) gain skills needed to seek authentic answers to those questions in a variety of credible, accessible sources, (3) deeply explore innovative solutions to the problems that interest and perplex them, and (4) persist in pursuing ideas that will ultimately change our world” (Small, 2014, p. 19).

3.1 Project Goals and Performance Outcomes. The overarching goals of this two-year IMLS National Leadership Grants for Libraries - Demonstration Project support *Strategic Goal 1: IMLS places the learner at the center and supports engaging experiences in libraries and museums that prepare people to be full participants in their local communities and our global society* by creating a rich, multifaceted and innovative collection of Web-based resources called *The Innovation Destination*, designed for school librarians to use individually or collaboratively with other educators, to motivate and guide young students’ (grades 4-8) inquiry and critical thinking skills, facilitate their opportunities for problem solving, stimulate their curiosity and imaginations, enhance their information-seeking capabilities, and fuel and nurture their passion for discovery and innovation. This free, accessible resource, also potentially of use to classroom teachers, youth librarians, museum educators, parents and students, in school and at home, will provide online training for school librarians who wish to serve as *innovation mentors*, to effectively nurture and guide students who otherwise lack such support. The following performance outcomes are anticipated as a result of the proposed project:

Outcome 1. School librarians will recognize the importance of motivating and supporting student innovation by creating *innovation spaces* within their libraries.

Outcome 2: School librarians will report the intention to integrate *The Innovation Destination*’s network of resources into their programs.

Outcome 3: School librarians will demonstrate knowledge and skills for being *innovation mentors* to students in their schools;

Outcome 4: School librarians will report increased student interest in innovation resources and activities.

Outcome 5: The library profession will recognize the importance of the role of school libraries as innovation spaces and of school librarians as innovation mentors.

4.0 POTENTIAL IMPACT

Public libraries have emerged as leaders in the movement toward fostering creativity and innovation in their communities through makerspaces, commons-based spaces with a variety of cutting-edge technologies and resources in which their constituents can imagine, create, and produce (Hildreth, 2012). This project promises to have a national impact on the creation of innovation spaces in school libraries through *The Innovation Destination*, a web-based collection of hundreds of teaching/learning resources that stimulate student innovative thinking and behaviors and train librarians as mentors to young innovators.

This project will create a broad network of innovative and freely available resources, for use by school librarians who want to transform their libraries into innovation spaces, create innovation-related programs and activities that stimulate curiosity and inquiry, and inspire and support students' innovative activities. The project complements the current makerspaces movement by bringing together an impressive team of University faculty who have directed dozens of innovative, funded projects, mentoring and innovation experts, school librarians, web designers, and award-winning young innovators to create a unique network of teaching/learning resources, including a collection of video interviews with young innovators (modeled after the highly successful *Prendismo* collection of adult innovator interview video clips), intended to inform and inspire young students to think and use their inquiry skills creatively to put their innovation ideas into action.

While designed for school librarians, this project also has the potential to engage the larger library, museum, and education communities, including (1) youth services public librarians who want to create or enhance existing innovation spaces for young innovators within their libraries, (2) classroom teachers (particularly in STEM subjects) and home schooling parents who wish to integrate this content into the curriculum, (3) parents who wish to use them to stimulate curiosity and inspire innovation behaviors in their children, (4) innovation organizations (e.g., state invention conventions) for use with their thousands of young members nationwide, (5) museum instructors and educational directors wishing to design innovation programs for young children, and (6) potential young innovators who find these resources inspirational for stimulating their innovative ideas and insights into the innovation process. Success potential for this project is very high because it (1) brings together a strong project team, (2) will be hosted on a large-scale, freely-accessible, highly-used resource, *S.O.S. for Information Literacy* and (2) has strong dissemination and sustainability plans.

5.0 PROJECT DESIGN

The purpose of the proposed project is to create a freely accessible resource (*The Innovation Destination*) that stimulates and supports students' creative thinking and innovation activities. This resource will be designed by and for school librarians for use with students in grades 4-8 and accessible directly or through the popular and well-established *S.O.S. for Information Literacy* and *WebJunction's* (OCLC) learning community websites. *The Innovation Destination* will contain a variety of original, standards-based, STEM-integrated, vetted resources (gr. 4-8), such as inclusive curricula, lesson plans, and learning activities, relevant web links, pathfinders, learning games and media, research articles, and links to information about local, state and national events for young innovators. These resources will support the use of the site's centerpiece, *KidsClips*, a unique and free searchable database of hundreds of original and pre-existing video segments from interviews with 50 successful young innovators, recruited through the project's partners, organizations that support young innovators. *KidsClips* will be modeled after *Prendismo* (means "turn on a light"), Cornell's popular collection of video interviews with adult innovators and used in university entrepreneurship programs nationwide.

5.1 Planning and Activities. The proposed project focuses on the design, development, iterative testing, revision, implementation, and evaluation of a web-based resource to support school librarians' efforts to create innovation spaces within their libraries and to serve as mentors to young innovators (grades 4-8) (see *Schedule of Completion* for detailed timeline). All of *The Innovation Destination* lesson plans/learning activities, *KidsClips* and other components will reside in a customized section of *S.O.S. for Information Literacy*, the award-winning, IMLS-funded database of K-16 lesson plans and teaching ideas (www.informationliteracy.org). In the first month of the project, a 10-member Project Advisory Committee (PAC) will be formed and an initial virtual meeting will be held using videoconferencing tools (e.g., Adobe Connect). The PAC will be made up of four (4) youth innovation experts (one designated representative from each of the partner innovation organizations) and six (6) school librarians recruited nationally (based on their interest and experience in innovation) via professional listservs and paid a modest stipend for their service. In addition to providing expert advice on design of the project deliverables (e.g., *KidsClips* videos, instructional materials, mentoring strategies) (Yr 1), the PAC librarians will formatively evaluate the online mentoring learning module and participate in the mentoring Webinars (Yr 1, 2). The project's PI will chair the semi-annual PAC meetings, in which the co-PI, Web developer and mentoring expert will also participate. Informal meetings with individual PAC members will be held as needed to elicit advice, input, and formative feedback on project deliverables.

In addition, ten (10) young innovators (grades 4-8) will be recruited through the participating innovation organizations and paid a modest stipend to serve on a KidsPAC focus group (Yr 1) and review the *KidsClips* video database and selected learning materials (Yr 2). The KidsPAC will meet virtually at least two times during the project to allow the project team to gather feedback on the design and content of materials in *The Innovation Destination* and to brainstorm ideas for implementation of the *KidsClips* video database. Input from both the PAC and KidsPAC will inform the design guidelines for *The Innovation Destination* and all processes, activities, feedback will be documented by the project team and disseminated through published articles and conference/meeting presentations, as well as posted on the project's site (Yr 2) to serve as a model for others wishing to replicate this (or a similar) project after the grant period ends.

5.2 Design and Development of Instructional Materials. Twenty (20) school librarians will be recruited nationwide (Yr 1) through LM_NET, AASLforum and other professional listservs and each will be paid a modest stipend to create five (5) inclusive, inquiry-based STEM lesson plans and five (5) inclusive inquiry-based, STEM stand-alone learning activities (total 200) for use with students in grades 4-8, each related to one or more of the *KidsClips* video segments. A lesson planning template and learning activity guidelines will be provided to these librarians, specifying the required information and how to connect to specific *KidsClips* videos (see 4.3 *Design and Development of Videos*), inclusion of support materials (e.g., handouts, games), links to both Next Generation Science standards and AASL 21st Century Learning standards, and incorporation of the three targeted instructional models (see 2.2 *Teaching Inquiry and Critical Thinking Skills for Innovation*). Once reviewed and approved by the PI, the school librarians will submit their materials to *S.O.S.* using its automated submission system which will be modified to ensure that these materials are stored in *The Innovation Destination*. Given the popularity of the *S.O.S.* Web site and the ease of its lesson plan/learning activity submission process, it is anticipated that additional plans and activities for fostering innovation will be submitted to this collection by librarians, *after the grant period ends*. Additional resource materials developed by the project team, such as related documents and websites (e.g., a list of state invention conventions, essential makerspaces materials), related research articles, and idea generation and visualization techniques (e.g., brainstorming, storyboarding) will be linked to relevant videos and lesson plans.

5.3 Design and Development of Videos. The development of the innovative video database, *KidsClips* (Yr1), based on interviews with young innovators, will be a key component of *The Innovation Destination* site. A representative group of 50 successful young innovators will be identified and recruited by the project team, working collaboratively with the partner organizations, to participate in Skype-based interviews. Each of the 50 recorded video interviews will contain responses to 7-10 question topics (e.g., How Do I Get My Idea? What Information Will I Need?) and will be edited using Adobe Premiere Pro, creating an anticipated database of 350-500 video clips (2-5 minutes each), searchable by topic. Our project partners representing young innovator organizations will facilitate recruitment of young innovators within their membership by posting online invitations to participate in *KidsClips* interviews to their parents. These partners are committed to identifying a diverse and inclusive population of young participants (e.g., racial and ethnic minorities, females, students with disabilities) to participate in both *KidsClips* interviews and the Kids Project Advisory Committee (KidsPAC), ensuring broad representation. As an incentive for participating and with parental consent, each young interview volunteer's photo, first name, and invention will appear on a section of *The Innovation Destination* to be known as the "Young Innovators' Wall of Fame." Videos will be accessibility compliant (e.g., closed captioning and/or transcriptions provided as an alternative format for users with hearing impairments). Appropriate existing videos of young innovators posted to video sites (e.g. YouTube) may also be used/adapted and incorporated into *KidsClips*, with written permission from their creators. Inquiry-based instructional/learning resources (e.g., lesson plans, support materials) for students in grades 4-8 will be linked to one or more of the videos.

5.4 Iterative Design of Website Components. Iterative design is a cyclical process of prototyping, testing, and analyzing various parts of a product, repeated through the development process with feedback incorporated into the next design iteration. The process is repeated until important issues have been satisfactorily resolved and is intended to ensure the best design possible. Ten (10) school librarians nationwide will be recruited and paid a

modest honorarium to participate in the iterative design of selected components of *The Innovation Destination* site (e.g., lesson plans, videos) at key points in the development process (Yrs 1&2). This allows the resource to be tested in an authentic setting with actual users while it is still possible to use their feedback to make revisions. Each librarian will receive guiding questions that facilitate testing/feedback processes.

5.5. Training Innovation Mentors. Wagner (2012) found that young innovators, from both affluent *and* high needs schools, need mentors to encourage their passions. Successful mentoring is a learning partnership, where “mentor and mentee work together to achieve specific, mutually defined goals that focus on developing the mentee’s skills, abilities, knowledge, and thinking” (Zachary, 2012, p. 3). School librarians have an opportunity to serve as such mentors, supporting students, particularly those without adult mentors in school or at home, and help them build their confidence and competence to explore, take risks, pursue their ideas, be willing to fail, and use their failures to pursue new ideas. To help accomplish this, a renowned expert in the area of mentoring will serve as a consultant to the project team to develop, test and launch a self-paced, innovation-focused, online mentoring learning module, including strategies for guiding, supporting and motivating budding young innovators. The module will be pilot tested by PAC librarians (Yr1), Two free Webinars (Yrs 1 & 2), developed and presented by the mentoring consultant, in collaboration with the project team & PAC, will help promote successful mentoring behaviors by school librarians and a mentoring culture in school libraries. The combination of Webinars and online training module promises to extend the capacity of school librarians nationwide to serve students as *innovation mentors* in their schools.

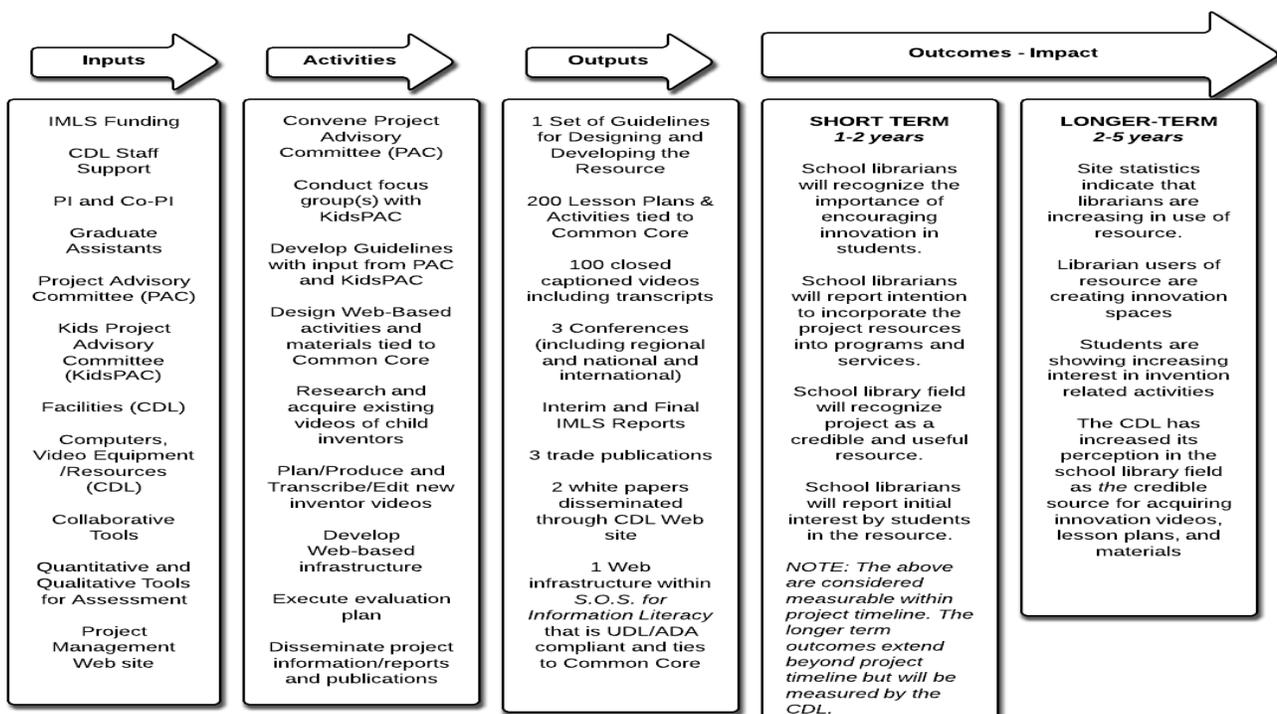
6.0 DIVERSITY

The PI and co-PI have a long record of diversity and inclusion in funded projects. This project will address diversity in several ways: (1) the project team includes people with disabilities and the selection of PAC members will reflect diversity; (2) with our partners’ input, we will recruit a diverse group of young innovators to participate in KidsClips video interviews; (3) design of project videos, lesson plans and other materials will address UDL principles to ensure accessibility and inclusion, and (4) the online training module focuses on mentoring students typically underrepresented in innovation activities.

7.0 PROJECT MANAGEMENT

The top-level logic model (see Fig. 1) provides an overview of how the project will be tracked and managed

Fig. 1. Inputs, Activities, Outputs and Outcomes. [NOTE: Larger print version in Appendix A.]



with links between the resources the project will have and the activities and outputs necessary to achieve the desired outcomes. This management approach has been used successfully by the PI and co-PI on other IMLS-funded projects, helping the project team to continuously assess whether it is on course to achieve its stated project goals. Also considered a best practice, we will continue to use our existing project management online tool to stay on top of important milestones and to archive progress.

7.1 Project Evaluation. The project evaluation plan designates indicators, measures, and goals that have been set for successful accomplishment of projected outcomes (see Table 1). In this plan, we focus on short-term outcomes, measurable *within the grant timeline*. They include outcomes related to attitudes, intended behaviors, and perceptions necessary for success; they are based on conservative estimates, taking into consideration that new ideas and services are not likely to achieve wide-scale adoption within such a short timeframe. Those who register (for free) for *The Innovation Destination* (via *S.O.S.*) will be invited to participate in an online survey from the time of the national project launch (Yr 2) until the end of the grant period. A representative sample of survey participants will be recruited/selected for more in-depth investigation via email interviews. Important longer-term goals (shown in the logic model) will be evaluated in their proper timeframe as part of the Center for Digital Literacy’s continuing project evaluation activities. Website statistics (e.g., # of unique visitors) and other relevant tracking information will be collected during and after the grant period, following completion of the development of the resource. (See *Digital Content Supplementary Information Form* for details.)

Table 1. Evaluation Plan: Outcomes, Indicators, Data Source, Data Intervals, Goal/Target.

Outcome 1. School librarians will recognize the importance of motivating and supporting student innovation by creating innovation spaces within their libraries.

Indicators	Data Source	Data Intervals	Goal/Target
1. After reviewing and using <i>The Innovation Destination</i> Web site, school librarians will indicate their perceptions of the importance of promoting inquiry, critical thinking and innovation activities to students.	- Online survey	-Upon completion of technical development of resource and approximately 60 days after the national launch.	-At least 50% of librarians surveyed will highly rate the importance of promoting students’ innovative thinking/activities.
2. After reviewing and using <i>The Innovation Destination</i> Web site, librarians will acknowledge their intention to create innovation spaces within their libraries and mentor innovation in students.	-Online survey -Follow-up email interviews with a representative sample of survey participants.	- Same as above -After completion of online survey (within 2 weeks)	-50% or more of interviewees will describe ways they will create/have created innovation spaces and used mentoring behaviors with students. -The goal of the interviews is to garner richer detail and anecdotal information.

Outcome 2: School librarians report their intentions to integrate *The Innovation Destination’s* network of resources into their programs.

Indicators	Data Source	Data Intervals	Goal/Target
1. As a result of exploring <i>The Innovation Destination</i> and its resources, school librarians will report their intention to utilize <i>KidsClips</i> , instructional materials, and/or mentoring information.	-Online survey - Email Interviews	-- Approximately 60 days after national launch --After completion of online survey	-50% or more of those surveyed -50% or more of those surveyed
2. As a result of exploring <i>The Innovation Destination</i> and its resources, school librarians will report sharing the site’s resources with colleagues.	-Online survey - Email Interviews	-- Approx. 60 days after launch -After completion of online survey	-Garner rich detail and anecdotal information.

Outcome 3: School librarians will demonstrate knowledge and skills as innovation mentors for students in their schools.

Indicators	Data Source	Data Intervals	Goal/Target
1. As a result of completing the Online Mentor Training Module and associated materials, school librarians will demonstrate knowledge of the Inquiry Process Model.	-Post module test quantitative knowledge items	-Conclusion of Year 1	-75% of participating librarians who complete the training will score 80% or higher on knowledge items related to the Inquiry Process Model.
2. As a result of completing the Online Mentor Training Module and associated materials, school librarians will demonstrate knowledge of mentoring skills and strategies.	-Post module test quantitative knowledge items	-Conclusion of Year 1	-75% of participating librarians who complete the training will score 80% or higher on knowledge items related to mentoring strategies.
3. As a result of completing the Online Mentor Training Module, school librarians will suggest mentoring strategies for promoting innovation behaviors.	-Post module qualitative comments responding to scenarios presented.	-Conclusion of Year 1	-75% of participating librarians who complete the training will provide relevant, useful strategies.

Outcome 4: School librarians will report increased student interest in innovation resources and activities

Indicators	Data Source	Data Intervals	Goal/Target
1. School librarians who have introduced lessons and activities from the project site will report initial student interest.	-Online survey -Email interviews	-Same as Outcome 1, 2 - After completion of online survey	- at least 50% of librarians report via survey high student interest. - 50% or more of librarians provide examples of increased interest in innovation behaviors and activities.
2. School librarians will provide evidence of increased interest in innovation by students after introduction to <i>KidsClips</i> .	-Online survey -Email interviews	-Same as Outcome 1, 2 - After completion of online survey	-Garner rich detail and anecdotal info.

Outcome 5: The library profession will recognize the importance of the role of school libraries as innovation spaces and of school librarians as innovation mentors.

Indicators	Data Source	Data Intervals	Goal/Target
1. Articles about the proposed project, written/submitted by the project team and practitioners, will be accepted for publication by professional journals/newsletters.	-Professional publications	-Submitted in Yr 1 & 2 of the grant	-3 prof. publications in journals and trade publications
2. White papers posted to CDL Web site	-Acknowledgement of interest by researchers and practitioners.	-Submitted in Yrs 1 & 2 of the grant	-2 white papers
3. Proposals on project, written/ submitted by the project team, will be accepted for presentation at 2 national, regional, state, and/or local professional meetings and conferences.	-Acceptance documentation from library and/or education conferences/meetings.	-Submitted in Yrs 1 & 2 of the grant	-2 conference/ meeting acceptances

7.2 Project Resources, Personnel, Time and Budget. Appropriate resources, personnel, time, and budget are in place for this *two-year* IMLS-National Leadership Grant-Demonstration project. The project has a **Dec. 1, 2015 start date** and requests \$249,495 in IMLS funding. Syracuse University’s School of Information Studies and Center for Digital Literacy will provide a variety of resources to ensure the success of the project. Although cost-sharing is not required for proposals under \$250,000, the School of Information Studies is funding 65% of travel, and 15 credits of graduate course tuition per year for the project assistant, totaling [REDACTED] in cost-sharing for this project. CDL provides work space for the PI, co-PI, and project assistant; computer workstations dedicated to the project; and appropriate software for transcribing interviews, analysis of evaluation results, and reporting. A server which currently hosts *S.O.S.* and will host all project deliverables.

7.3 Key Personnel and Partners. The project team consists of:
Ruth V. Small, Ph.D., PI, is Meredith Professor of Information Studies and founding director of the Center for Digital Literacy, School of Information Studies, Syracuse University. She has directed or co-directed dozens of funded projects, including 13 IMLS grants (e.g., Project ENABLE) and 3 grants from the Kauffman

School Libraries as Innovation Spaces, School Librarians as Innovation Mentors

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Foundation's Initiative Program on Entrepreneurship. Dr. Small will lead design/testing/evaluation of web resources, Webinars and online training module, facilitate PAC and KidsPAC, and supervise project assistant.

Marilyn P. Arnone, Ph.D., co-PI, is Associate Research Professor/Professor of Practice, School of Information Studies/co-director of the Center for Digital Literacy, Syracuse University and Evaluation Vice-Chair, Institute on Disability & Public Policy, American University. She has directed several IMLS and Department of Education grants (e.g., *S.O.S.*) and has a rich background in video production (e.g., co-produced *Pappyland*, children's television series on The Learning Channel). She will oversee development and editing of the *KidsClips* video collection, collaborate on website development, and participate on the PAC.

Thomas Hardy, Consultant, is President/Owner of Grant Systems/Data Momentum, Co., Inc., a web design and software programming company in Ithaca, NY. He has worked with both PIs on several IMLS-funded projects (e.g., *Project ENABLE*, *S.O.S. for Information Literacy*). He will work with the team on *The Innovation Destination* site design and mentoring module, managing their programming/technical development.

Lois Zachary, Ed.D., Consultant, is President of Leadership Development Services, LLC/director, Center for Mentoring Excellence™. She is an internationally recognized expert on mentoring excellence and author of "The Mentor's Guide" series (Jossey-Bass, 2000), considered the primary resource in mentoring for leadership and learning. She will lead design/deliver Webinars and advisor for the mentoring module and PAC.

Project Assistant, TBD, a master's student in the School of Information Studies, Syracuse University, will serve as full-time graduate assistant to the project for both years. The Project Assistant will take PAC meeting minutes, assist with KidsPAC focus groups, transcribe videos, and work on all aspects of the website and training module development, testing and evaluation.

By *Kids For Kids*, *Time2Invent*, *Brooklyn-on-Tech*, and *the Connecticut Invention Convention*, non-profit organizations that support young STEM innovators, will be partners in this project, recruiting participants for and advising on video interviews and KidsPAC, and participating as PAC advisors. OCLC's *WebJunction* will collaborate with the project team on all dissemination efforts.

8.0 COMMUNICATIONS PLAN

An active dissemination effort, *even beyond the funding period*, is critical for the success of this project in order to assure that project information continues to be available to library professionals, teachers, and parents. The Innovation Destination site will be accessible through its own URL and the *S.O.S. for Information Literacy* site and promoted through project partner, *WebJunction*. As the PI and co-PI have strong publication records and have presented often at professional library and education conferences, information about the proposed project will be disseminated through (1) articles in professional journals for library practitioners and teachers [e.g., *Knowledge Quest*, *School Library Monthly*], (2) presentation at professional library association conferences (e.g., AASL, IASL), (3) reports, announcements, white papers via the Center for Digital Literacy and Syracuse University web sites, broadcast and social media (Twitter, Facebook), local and state librarian e-newsletters, and e-newsletters of innovator organizations, and (4) free webinar training sessions on innovation mentoring.

9.0 SUSTAINABILITY

Strategically situating this project within the popular, enduring *S.O.S. for Information Literacy* site, housed at and maintained by Syracuse University's Center for Digital Literacy (CDL) since 2005, ensures sustainability for both projects. *S.O.S.* is a web-based resource funded by IMLS grants (2000-2010) supporting school librarians and teachers with quality lesson plans and support materials for teaching 21st century inquiry skills to students. The proposed website with its unique, innovative, searchable *KidsClips* video collection and supporting materials adds to the variety of resources available to librarians and others to support young innovators. Linking STEM standards-based teaching/learning resources to innovation videos enhances both this project and *S.O.S.*, promising broad usage. *S.O.S.*'s automated lesson plan submission system allows continuing involvement in this project by librarians and other educators. The PI and co-PI enjoy 20 years of successful collaboration with Mr. Hardy, who maintains the technical quality of *S.O.S.* and other CDL projects and will oversee the technical development of this project, ensuring the website is properly updated and maintained into the future.

(see Appendix A: *Proposal References*)

Ruth V. Small

5/26/2015

SCHEDULE OF COMPLETION

Syracuse University: IMLS-NLG Demonstration Proposal:

School Libraries as Innovation Spaces, School Librarians as Innovation Mentors

MAJOR ACTIVITIES	(12/1/15 start date)		DURATION (by semester over 2 years)			(11/30/17 end date)	
	Fall 2015	Spr 2016	Sum 2016	Fall 2016	Spr 2017	Sum 2017	Fall 2017
Conduct project team meetings	X	X	X	X	X	X	X
Convene Project Advisory Committee (PAC)	X		X		X		X
Develop/test/revise Innovation Destination infrastructure	X	X	X				
Design full project evaluation plan		X					
Design, develop, test, implement online mentoring training	X	X	X	X			
Work with partner organizations to recruit KidsPAC		X	X				
Recruit 10 librarians to participate in iterative design testing		X	X	X	X	X	
Conduct iterative design		X	X				
Hold KidsPAC focus groups, gather feedback/brainstorm ideas		X	X	X	X		
With partners, recruit 50 young innovators for video interviews		X	X				
Identify potential existing videos and secure permission to use			X	X			
Develop guidelines with PAC and KidsPAC input		X	X				
Research/acquire appropriate existing videos		X	X				
Plan/produce video interviews			X	X	X		
Transcribe/edit/close caption interview videos		X	X	X	X	X	
Create Young Innovators Wall of Fame						X	X
Design lesson planning template and learning activity guidelines			X				
Recruit 20 librarians to create lesson plans/activities			X				
Design of LPs and Web-based activities and materials		X	X				
Review of video database/learning materials by KidsPAC					X	X	
Post all Web components to SOS for Information Literacy site		X	X	X	X	X	X
Create, deliver, evaluate first mentoring webinar		X	X				
Write/submit interim report to IMLS				X			
Input materials into The Innovation Destination			X	X	X	X	
Launch project site							X
Create, deliver, evaluate second mentoring webinar					X	X	
Design, develop, test evaluation instruments			X	X	X	X	
Execute project evaluation plan				X	X	X	X
Analyze evaluation results				X	X	X	X
Write evaluation report						X	X
Write/submit white papers, journal publications			X	X	X	X	X
Prepare/submit conference presentations			X	X	X	X	X
Disseminate project information/reports/publications				X	X	X	X
Collaborate w/WebJunction to disseminate project deliverables	X	X	X	X	X	X	X
Write/submit final report (including evaluation results) to IMLS						X	X

DIGITAL STEWARDSHIP SUPPLEMENTARY INFORMATION FORM

Introduction:

IMLS is committed to expanding public access to IMLS-funded research, data and other digital products: the assets you create with IMLS funding require careful stewardship to protect and enhance their value. They should be freely and readily available for use and re-use by libraries, archives, museums and the public. Applying these principles to the development of digital products is not straightforward; because technology is dynamic and because we do not want to inhibit innovation, IMLS does not want to prescribe set standards and best practices that would certainly become quickly outdated. Instead, IMLS defines the outcomes your projects should achieve in a series of questions; your answers are used by IMLS staff and by expert peer reviewers to evaluate your proposal; and they will play a critical role in determining whether your grant will be funded. Together, your answers will comprise the basis for a work plan for your project, as they will address all the major components of the development process.

Instructions:

If you propose to create any type of digital product as part of your proposal, you must complete this form. IMLS defines digital products very broadly. If you are developing anything through the use of information technology – e.g., digital collections, web resources, metadata, software, data– you should assume that you need to complete this form.

Please indicate which of the following digital products you will create or collect during your project.

Check all that apply:

Every proposal creating a digital product should complete ...	Part I
If your project will create or collect ...	Then you should complete ...
<input type="checkbox"/> Digital content	Part II
<input type="checkbox"/> New software tools or applications	Part III
<input type="checkbox"/> A digital research dataset	Part IV

PART I.

A. Copyright and Intellectual Property Rights

We expect applicants to make federally funded work products widely available and usable through strategies such as publishing in open-access journals, depositing works in institutional or discipline-based repositories, and using non-restrictive licenses such as a Creative Commons license.

A.1 What will be the copyright or intellectual property status of the content you intend to create? Will you assign a Creative Commons license to the content? If so, which license will it be? <http://us.creativecommons.org/>

A.2 What ownership rights will your organization assert over the new digital content, and what conditions will you impose on access and use? Explain any terms of access and conditions of use, why they are justifiable, and how you will notify potential users of the digital resources.

A.3 Will you create any content or products which may involve privacy concerns, require obtaining permissions or rights, or raise any cultural sensitivities? If so, please describe the issues and how you plan to address them.

Part II: Projects Creating Digital Content

A. Creating New Digital Content

A.1 Describe the digital content you will create and the quantities of each type and format you will use.

A.2 List the equipment and software that you will use to create the content or the name of the service provider who will perform the work.

A.3 List all the digital file formats (e.g., XML, TIFF, MPEG) you plan to create, along with the relevant information on the appropriate quality standards (e.g., resolution, sampling rate, pixel dimensions).

B. Digital Workflow and Asset Maintenance/Preservation

B.1 Describe your quality control plan (i.e., how you will monitor and evaluate your workflow and products).

B.2 Describe your plan for preserving and maintaining digital assets during and after the grant period (e.g., storage systems, shared repositories, technical documentation, migration planning, commitment of organizational funding for these purposes). Please note: Storage and publication after the end of the grant period may be an allowable cost.

C. Metadata

C.1 Describe how you will produce metadata (e.g., technical, descriptive, administrative, preservation). Specify which standards you will use for the metadata structure (e.g., MARC, Dublin Core, Encoded Archival Description, PBCore, PREMIS) and metadata content (e.g., thesauri).

C.2 Explain your strategy for preserving and maintaining metadata created and/or collected during your project and after the grant period.

C.3 Explain what metadata sharing and/or other strategies you will use to facilitate widespread discovery and use of the digital content created during your project (e.g., an Advanced Programming Interface, contributions to the DPLA or other support to allow batch queries and retrieval of metadata).

D. Access and Use

D.1 Describe how you will make the digital content available to the public. Include details such as the delivery strategy (e.g., openly available online, available to specified audiences) and underlying hardware/software platforms and infrastructure (e.g., specific digital repository software or leased services, accessibility via standard web browsers, requirements for special software tools in order to use the content).

D.2 Provide URL(s) for any examples of previous digital collections or content your organization has created.

Part III. Projects Creating New Software Tools or Applications

A. General Information

A.1 Describe the software tool or electronic system you intend to create, including a summary of the major functions it will perform and the intended primary audience(s) the system or tool will serve.

A.2 List other existing digital tools that wholly or partially perform the same functions, and explain how the tool or system you will create is different.

B. Technical Information

B.1 List the programming languages, platforms, software, or other applications you will use to create your new digital content.

B.2 Describe how the intended software or system will extend or interoperate with other existing software applications or systems.

B.3 Describe any underlying additional software or system dependencies necessary to run the new software or system you will create.

B.4 Describe the processes you will use for development documentation and for maintaining and updating technical documentation for users of the software or system.

B.5 Provide URL(s) for examples of any previous software tools or systems your organization has created.

C. Access and Use

C.1 We expect applicants seeking federal funds for software or system development to develop and release these products as open source software. What ownership rights will your organization assert over the new software or system, and what conditions will you impose on the access and use of this product? Explain any terms of access and conditions of use, why these terms or conditions are justifiable, and how you will notify potential users of the software or system.

C.2 Describe how you will make the software or system available to the public and/or its intended users.

Part IV. Projects Creating Research Data

1. Summarize the intended purpose of the research, the type of data to be collected or generated, the method for collection or generation, the approximate dates or frequency when the data will be generated or collected, and the intended use of the data collected.

2. Does the proposed research activity require approval by any internal review panel or institutional review board (IRB)? If so, has the proposed research activity already been approved? If not, what is your plan for securing approval?

3. Will you collect any personally identifiable information (PII) about individuals or proprietary information about organizations? If so, detail the specific steps you will take to protect such information while you prepare the research data files for public release (e.g. data anonymization, suppression of personally identifiable information, synthetic data).

4. If you will collect additional documentation such as consent agreements along with the data, describe plans for preserving the documentation and ensuring that its relationship to the collected data is maintained.

ORIGINAL PRELIMINARY PROPOSAL

5. What will you use to collect or generate the data? Provide details about any technical requirements or dependencies that would be necessary for understanding, retrieving, displaying, or processing the dataset(s).

6. What documentation will you capture or create along with the dataset(s)? What standards or schema will you use? Where will the documentation be stored, and in what format(s)? How will you permanently associate and manage the documentation with the dataset(s) it describes?

7. What is the plan for archiving, managing, and disseminating data after the completion of research activity?

8. Identify where you will be publicly depositing dataset(s):

Name of repository: _____

URL: _____

9. When and how frequently will you review this data management plan? How will the implementation be monitored?

Syracuse University

School Libraries as Innovation Spaces, School Librarians as Innovation Mentors:
Stimulating Students' Curiosity, Inquiry and Innovative Thinking

Project Description and Work Plan

Innovation is the very essence of the American spirit, requiring a combination of effective inquiry, problem-solving skills, and creative thinking skills, mixed with the curiosity and perseverance for seeking viable solutions to problems. While all children have creative potential, often their innovative behaviors thrive and endure only if supported/nurtured. With today's emphasis in schools on rigid curricula, standards, and testing, it becomes increasingly more likely that students will develop a "good enough" mentality where they no longer stretch their imaginations, seek answers to questions that go beyond the curriculum, or allow themselves to explore perplexing issues that pique their curiosity (Small, 2014). Recent research found that young innovators (grades 4-8) perceive the role of the library/librarian as "marginal" in supporting their innovation activities, even though most participants had underdeveloped inquiry skills, depending on adult mentors (Small, 2014).

This two-year IMLS *National Leadership Project Grant: Learning Spaces in Libraries* proposal partners the lead agency from Syracuse University (learning and motivation experts/researchers), with By Kids For Kids, Bridge the Gap/Time2Invent, and the Connecticut Invention Convention (state-wide and national organizations that sponsor and support in- and out-of-school innovation programs and events for K-12 students). The team, together with the project's mentoring expert, Web developer, and 60 school librarians and students nationwide, will create and pilot through iterative testing a cohesive network of innovative, free, and accessible electronic resources called "The Innovation Destination," hosted on the award-winning, IMLS-funded *S.O.S. for Information Literacy* Web site. These resources support and expand librarians' capacity for transforming their libraries into creative spaces where kids are free to explore and experiment, understanding that failure isn't the end (Compton, 2014) and that stimulate the curiosity, interest and inquiry of *all* students, inspiring innovative activities and enabling participatory learning. *The Innovation Destination* will contain a variety of original, standards-based, STEM-integrated, vetted resources (gr. 4-8), including inclusive curricula, lesson plans, and learning activities, relevant Web links, pathfinders, learning games and media, research articles, and links to information about local, state and national events for young innovators. These resources will support the use of the site's centerpiece, *KidsClips*, a unique and *free* collection of hundreds of original and pre-existing video segments from interviews with successful young innovators. *KidsClips* will be modelled after *Prendismo*, Cornell's popular collection of video interviews with adult innovators. The project will also develop training for extending the number and ability of school librarians to serve students as *innovation mentors* nationwide.

The overall goals of the proposed project are to: (1) create a rich, multifaceted and innovative set of resources for librarians, teachers, parents and 4th-8th grade students to use to help facilitate and support students' perceptions of libraries as innovation spaces, places where *all* students (especially those who lack both resources at home and adult mentors) can go to (a) stimulate their curiosity and pursue their ideas, (b) learn essential inquiry skills for asking effective questions and adeptly searching for potential answers, (c) work collaboratively, and (d) create, test, and fully develop their innovative ideas, and (2) provide guidance and training to librarians who wish to effectively mentor and help students acquire the skills and attitudes necessary to successfully bring their innovative ideas to life. A Project Advisory Committee (PAC) of school librarians and representatives from the project's partnering organizations, as well as a KidsPAC of successful 4th-8th grade innovators, will advise the project team. Working together, the project team, partners and advisors will disseminate information about the project via a variety of print, electronic, media and social media channels, as well as through publications and presentations at professional conferences and meetings. Situating the proposed project within the popular and enduring (since 2005) *S.O.S. for Information Literacy* site, housed at Syracuse University's Center for Digital Literacy, ensures sustainability for both projects.

Relevance to Project Categories/Funding Priorities

This project directly addresses the *Learning Spaces in Libraries project category* and its 10 issues: *creating partnerships and communities of practice for practitioners across fields* (thru partnerships with innovation organizations/creating a community of practice of school librarians as innovation mentors); *supporting a cultural shift away from passive service models to proactive, anticipatory and engaged user service models* (*The Innovation Destination* site will be a major resource for librarians who wish to provide programs for young innovators); *designing, developing, testing, and sharing informal learning curricula* (thru *The Innovation*

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School Libraries as Innovation Spaces, School Librarians as Innovation Mentors:
Stimulating Students' Curiosity, Inquiry and Innovative Thinking

Destination website and its *KidsClips* videos and other teaching/learning resources); *building STEM learning opportunities for at-risk youth* (including young innovators with disabilities as *KidsClips* role models); *building bridges to national learning standards or other formal curricula* (standards-based and STEM-integrated resources); *developing replicable models for community engagement, mentorship, and partnerships* (project partners organizations dedicated to supporting young innovators and strong train-the-trainer component on mentoring young innovators); *defining strategies to increase libraries' relationships and collaborations with education partners in other formal and/or informal settings* (builds on existing relationships between university faculty, innovation organizations, and school librarians); *increasing national and local awareness of library importance in informal learning conversations* (thru testing and dissemination plans); *using libraries to increase STEM literacies* (freely-accessible/unique STEM-related resources that foster STEM literacies); and *improving methodologies for measuring the impact of these service models* (testing methods for all resources).

Potential Impact

This project complements the current makerspaces movement by bringing together a team of University faculty (including Dr. Ruth Small as PI), innovation experts, school librarians, and computer scientists to create a unique network of innovative, diverse, and freely available resources, including a collection of video interviews with young innovators (modeled after Cornell's highly successful *Prendismo* collection of adult innovator interview video clips used by hundreds of colleges and businesses), intended to inform and inspire young students to think innovatively and use their information literacy skills creatively to put their ideas into action. While designed for school librarians, it also has the potential to engage the larger library and education community, including (1) youth services public librarians who want to create or enhance existing innovation spaces for young innovators within their libraries, (2) classroom teachers (particularly in STEM subjects) and home schoolers who wish to integrate this content into the curriculum, (3) parents who wish to use them to inspire innovation/support curiosity in their children, (4) innovation organizations (e.g., state invention conventions) for use with their thousands of young members nationwide, and (5) individual potential young innovators who use it as inspiration for their own innovative ideas and insight into the innovation process. Success potential for this project is very high because (1) will be hosted on a large-scale, existing, freely-accessible, and highly used (IMLS-funded) resource, *S.O.S. for Information Literacy* (2009 AASL Best Website for Teaching & Learning containing 1000+ standards-based, K-16 curriculum-integrated lesson plans and teaching ideas and The site has had more than 30,000 unique visitors use the site, post-funding). and (2) has a strong marketing/dissemination plan.

Projected Performance Goals and Outcomes

The project goals are: **Goal 1:** Librarians will recognize the need for motivating and supporting student innovation, libraries creating "innovation spaces," and themselves as "innovation mentors" through project participation; **Goal 2:** Librarians will incorporate and share the proposed project's network of resources; **Goal 3:** Librarians will demonstrate their ability to be *innovation mentors* for students in their schools; **Goal 4:** The school library profession will recognize the value of *The Innovation Destination* as a credible and useful educational resource; and **Goal 5:** Students will perceive the importance of libraries in supporting innovation and of librarians as innovation mentors. Assessments to determine if goals were met include surveys, observations, self-report measures, artifacts, reports, and documentation of project deliverables.

Estimated Budget: \$247,000

References: (1) Compton, E. (2014). *IMLS Convening on Learning Spaces in Libraries*.

http://www.ims.gov/assets/1/AssetManager/IMLSFocusNotes_SanFrancisco.pdf; (2) Small, R.V. (2014). The motivational and information needs of young innovators: Stimulating student creativity and inventive thinking. *School Library Research*, vol. 17. http://www.ala.org/aasl/sites/ala.org/aasl/files/content/aaslpubsandjournals/slr/vol17/SLR_MotivationalNeeds_V17.pdf; (3) *The Prendismo Collection*. <https://www.prendismo.com/about/prendismo.cfm>