



Museums for America

Sample Application MA-10-16-0411-16
Project Category: Learning Experiences
Funding Level: \$25,001-\$150,000

Denver Museum of Nature and Science

Amount awarded by IMLS:	\$128,506
Amount of cost share:	\$137,611

Attached are the following components excerpted from the original application.

- Abstract
- Narrative
- Schedule of Completion

Please note that the instructions for preparing narratives for FY2017 applications differ from those that guided the preparation of previous applications. Be sure to use the narrative instructions in the FY2017 Notice of Funding Opportunity for the grant program and project category to which you are applying.

Abstract

The Denver Museum of Nature & Science (DMNS) requests \$135,604 for an MFA Learning Experiences project, *Opening museum doors to school districts: District-wide shared educational experiences*. The proposed project will continue, expand, and evaluate a promising education model for whole-school communities. This model provides access to high quality museum educational experiences for all students and teachers in elementary and K-8 schools in two local under-resourced school districts. The program provides targeted professional development (PD) for all teachers in the school and simultaneously provides access to a dynamic and proven itinerary of programs for students and chaperones during their visit to the Museum (Field Trip Adventures). The program concurrently serves the needs of districts, teachers, students, and chaperones by removing logistical and cost barriers and providing customized learning experiences that meet the goals of all of these audiences. DMNS has successfully prototyped this model in collaboration with Adams County School District 50 (Adams 50). The proposed project would refine the model with that district while also adding a second district, Mapleton Public Schools (Mapleton).

Over the 27-month grant period (October 1, 2016 – December 31, 2018), the project will serve 16,000 students and 600 teachers between the two districts through collaboratively developed and presented professional development days for all elementary grade teachers, and field trip learning experiences for all students in each of the targeted schools. Funding from IMLS would support teacher resources, bus transportation stipends, and evaluation of the project. Cost share offered by DMNS totaling \$137,611 includes Museum personnel necessary to carry out the planned activities.

We will implement one visit per school per calendar year for a total of two visits per school over the course of the grant period. Activities to occur include: (1) hold meetings with district personnel to establish and then refine how program can meet district goals for teachers and students; (2) co-create with district personnel district-relevant teacher professional development objectives and agenda incorporating inquiry framework, academic standards, and other needs defined by the district(s); (3) implement professional development sessions at DMNS for all teachers from each school in one day each; (4) develop and implement customized field trips for students and chaperones at the Museum (all students from each school in one day each); and (5) evaluate the program for how effectively it is meeting its objectives. An external evaluator with a strong track record of conducting evaluation of museum learning experiences, including other district-museum partnership programs at DMNS, will conduct the evaluation.

Successful examples of whole-school teacher professional development paired with hands-on programming for students are rare; therefore the path charted by DMNS is capable of huge impact. The project will result in benefits for districts, teachers, and students alike. Teachers will increase their understanding of professional development topics and incorporate learnings into their classroom practice. Students will increase their excitement, interest, and knowledge of the science topics covered during their field trip experience. Further, as Colorado's school districts are locally controlled, this project provides a rare opportunity to offer custom-built, highly-targeted teacher professional development. Together, the program elements impact the entire school community by reducing the opportunity gap for students and improving science instruction in schools.

In addition to the evaluation plan, project staff will assess the value of the program to the districts and explore shared museum-district funding models with an eye toward ongoing sustainability of the program. A report detailing sustainability/replication options tailored to different district needs will be completed and shared back with the districts and IMLS. Data and findings will also be shared with teachers and district personnel at a dissemination dinner event to be held at DMNS in late fall 2018. Findings will also be shared with local and national peer organizations. In addition to providing a direct benefit to our local school districts, this project seeks to build knowledge in the field around formal-informal learning partnerships and can support the museum field in ways to co-create with school districts in support of formal learning goals.

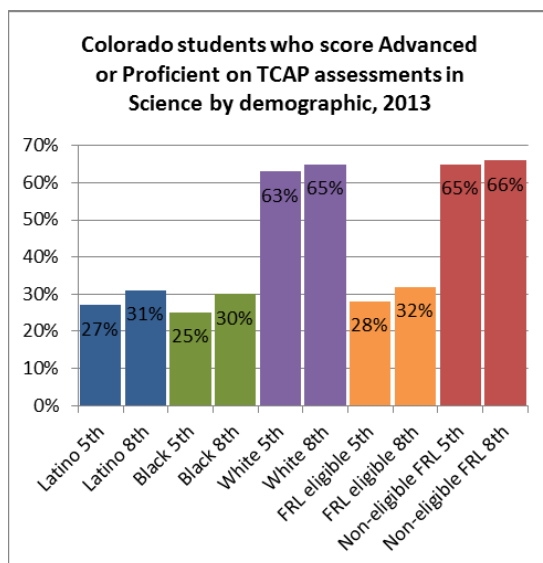
1. STATEMENT OF NEED

a. Project Description. The Denver Museum of Nature & Science (DMNS) seeks IMLS support for a Learning Experiences project that will continue, expand, and evaluate a promising education model for whole-school communities. This model provides access to high quality museum educational experiences for all students and teachers in elementary and K-8 schools in high needs school districts. DMNS has successfully prototyped this model in collaboration with Adams County School District 50 (Adams 50), a smaller Denver area school district, and will refine the model with that district while also adding a second district, Mapleton Public Schools (Mapleton) (letters of commitment – Appendix A). *Opening museum doors to school districts: District-wide shared educational experiences* provides targeted professional development (PD) for all teachers in the school and simultaneously provides a dynamic and proven itinerary of programs for students and chaperones during their visit to DMNS. The project concurrently serves the needs of districts, teachers, students, and chaperones by removing logistical and cost barriers and providing customized learning experiences that meet the goals of all of these audiences. Over the 27-month grant period, the project will serve 16,000 students and 600 teachers across the two districts through field trip learning experiences for all students in each of the targeted schools and collaboratively developed and presented professional development days for all elementary and K-8 teachers. Together, the program elements impact the entire school community by reducing the opportunity gap for students and improving science instruction in schools. In addition to an evaluation plan to assess how effectively the project is meeting its objectives, project staff will assess the value of the program to the districts and explore shared museum-district funding models with an eye toward ongoing sustainability and replicability.

b. Need, problem or challenge addressed. The Denver metro area has a critical need to improve science education attainment for under-resourced students. Both Adams 50 and Mapleton are smaller districts serving a large proportion of under-resourced students. Adams 50 is located north of Denver and serves approximately 10,000 students. Adams 50 has a Free and Reduced Lunch rate of 76%, and 83% of its student population is racial/ethnic minority, primarily Latino, which represents 73% of students (Colorado Department of Education (CDE), 2014). Adams 50 employs a “learner-centered, competency-based model” and is committed to a continuous improvement cycle for both teachers and students. This district’s greatest challenge has been being able to afford the time and resources to devote to effective PD. Mapleton has a Free and Reduced Lunch Rate of 61% and is also diverse with 68% racial/ethnic minority students, 61% Latino (CDE, 2014). Mapleton is centrally located in the Denver metro area, with the northern section within the city of Thornton (a residential suburb) and the larger southern portion comprised of light to heavy industrial areas. Mapleton serves over 8,400 students within 18 schools. High quality professional development for teachers and learning experiences for students are a main focus for Mapleton, and the ability to facilitate and provide them are significant challenges.

The need for engaging science experiences for students to address the opportunity gap:

On a national and local level, there is an urgent need to tackle the problem of widening achievement gaps in science. While Colorado students have improved proficiency in STEM over the last decade, TCAP (Colorado’s standardized testing system) scores in science show persistent and significant achievement gaps between black and Latino students and their white peers, as well as between low-income students (identified by being Free/Reduced Lunch eligible) and their more affluent peers (CDE, 2013 – see chart right). In Colorado, Latinos represent the fastest growing population, and will represent 34% of the state’s population by 2040 (Valdez, 2014).



Students from underserved backgrounds are at a disadvantage in terms of access to out-of-school learning opportunities. Research demonstrates that significant science learning occurs, and science identity and enthusiasm develops, outside the classroom in rich learner-driven science institutions like museums (Falk et al. 2014). Research also shows that achievement gaps

between advantaged and disadvantaged youth are more a consequence of availability of learning opportunities outside of school than within schools (Falk & Dierking, 2010). Informal (out-of-school) science education programs jump-start a child's long-term interest in science and can significantly improve understanding among populations typically underrepresented in science, such as those from low-income families and ethnic and language minorities (National Research Council, 2009). Because educational gains from museum-based learning experiences are even greater for students from less advantaged backgrounds, it is even more detrimental that field trip plans are frequently cut for under-resourced schools and districts (Greene, 2014).

A recent evaluation of DMNS' Field Trip Adventures also supports the value of museum learning experiences for teachers and students. Evaluation results (summarized in Appendix B) indicate that the programs provide the core necessities for learning; they are very engaging for students and convey new ideas, resonate emotionally, evoke personal memories, and connect to students' everyday lives. Field Trip Adventures are very well matched to specific grade-level standards and curricula; they meet teachers' needs and expectations; and chaperones, an audience that is often minimized in research on museum learning, are engaged and learning, too. Results also indicated that teachers strongly value the unique, hands-on experience they can't get in the classroom.

The need for quality teacher professional development:

It is generally challenging for smaller, under-resourced districts to provide both time and funds for teacher PD. A survey from the Association of School Administrators shows that when districts must cut their budgets, professional development is the first item to be cut nearly 70% of the time (AAAS, 2012). At the same time, there is a need to support elementary teachers with their confidence in and understanding of science and inquiry. Beginning elementary teachers, in particular, face challenges engaging in effective science teaching (Davis, Petish, & Smithey, 2006) and may even avoid teaching science altogether (Appleton & Kindt, 2002).

Improved teacher training has the power to foster an educational culture that is more conducive to student learning, retain new teachers more effectively, and enhance the performance of existing teachers (Crawford, 2011). DMNS has successfully provided teachers with professional development, tools, and resources to increase their confidence in incorporating inquiry. Data from another DMNS collaborative program, Urban Advantage Metro Denver, has demonstrated a statistically significant increase in teachers' level of confidence in incorporating inquiry after they received 30 hours of inquiry-based PD over the course of a school year. These teachers also reported spending significantly more time in class on student-directed investigation related activities than teachers in a control group.

How the program has addressed these needs to date:

The model that DMNS has implemented to date bridges the needs of whole-school communities. It offers a creative solution that provides opportunities for both teachers and students, and more efficiently and effectively addresses the constraints of time, logistical planning, and funding. For the last two years, DMNS has prototyped this model at the request of and in partnership with Adams 50. Following a spring 2014 pilot with two Adams 50 elementary schools, that fall DMNS welcomed over 5,100 students from all 12 of the Adams 50 elementary schools (Year 1) (one school per field trip date). Students participated in informal science programming that helped the district address academic standards via a learner centered approach, utilizing the unique immersive, hands-on resources available at the DMNS. Adams 50 provided chaperones who together with the students, enjoyed a facilitated program and explored commonly themed, age-appropriate activities on their own through the Field Trip Adventure program. In addition, the 164 Adams 50 teachers from those 12 elementary schools attended professional development sessions at the DMNS, primarily facilitated by Adams 50 training staff. DMNS' PD team provided modest support by featuring resources available to teachers. In Year 1, DMNS used scholarship funds from private donors to support the program's implementation (including transportation costs, material and space use fees, lunch for students and teachers, etc.).

Based on the success of Year 1, DMNS earned the confidence of Adams 50 administrators to support their teachers at a deeper level and our role in district PD was expanded. In Year 2 (fall 2015), the students and chaperones again participated in Field Trip Adventures and DMNS provided PD training on inquiry and the 5E instructional model (engage, explore, explain, elaborate, evaluate) in support of Adams 50's efforts to adopt a

new science curriculum. DMNS served as primary facilitator and host for PD sessions for 179 teachers within the district's 12 elementary schools and one K-8 STEM school. Teachers followed the PD sessions with further implementation back at their respective sites, moving toward building professional learning communities and in acknowledgement of the fact that one-time workshops have a low effect on changing teacher practice (Yoon, et al., 2007). DMNS received very positive feedback from Adams 50 about the usefulness of this model toward addressing their identified challenges. By Year 2, the district contributed funds to support the experience by paying for lunches for students and teachers and providing consultants and staff to co-develop the professional development with DMNS PD staff. This deeper level of co-creation enabled greater synergies and impact.

With each iteration, we have made efficiency and program improvements to arrive at the model we plan to implement and evaluate through this project. Adding a new partner to extend this model allows DMNS to provide greater access and a deeper experience for students and teachers in high needs communities. DMNS has not yet formally evaluated the model for efficacy and value, thus data included in the evaluation plan will be critical to developing the model further. We intend to evaluate for impact, quality, and perceived value, with the ultimate goal of identifying a model that is replicable and financially sustainable into the future.

This project addresses the student and teacher needs stated above by removing barriers associated with opportunity gaps and efficiently providing customized professional development that is highly relevant to each district. This in turn strengthens DMNS' ability to serve students and teachers overall and to better understand the climate of current needs and concerns for other districts. In a national survey conducted in 2009, teachers reported that while they had participated in professional development trainings that year, 90% stated that the trainings they attended were not useful (Darling-Hammond, et al., 2009). Greater relevance and response to teacher needs is critical to effective professional development. The iterative process of collaborative development and design, training, and support embedded in DMNS' model is helping the Museum be a greater agent of effective change in teaching practice.

c. Benefits. DMNS is an ideal setting for both teachers and students to cultivate positive experiences in science learning due to what it is able to offer: interactive and engaging collections, exhibits, and materials that foster lifelong learning (Falk et. al, 2014). This innovative model provides a shared learning experience that benefits the entire school community, including teachers, students, and districts.

Teachers. 600 teachers of primarily grades K-5 (300 per year) will increase their understanding of professional development topics and incorporate what they learned into classroom practice. They will directly benefit by receiving a high quality, district relevant PD session, experienced with colleagues which allows for team building and the benefits of a shared learning experience. They will also receive activity ideas and resources from the Museum to use in their classrooms to enhance their curricula and in turn, improve student learning.

Students. 16,000 students primarily in grades K-5 (8,000 per year) from the two districts will directly benefit from hands-on and educational experiences at the Museum with their peers and chaperones. The experience will increase their excitement, interest, and knowledge of the science topics covered during their field trip experience. While not the focus of this project's evaluation, chaperones also benefit from the program, as we learned through the Field Trip Adventures evaluation (Appendix B).

School Districts. School districts receive access to high quality professional development for their teacher corps without having to pay for hiring subs, and avoiding the inefficiency of providing professional development on an individual basis. The co-creation and development of the teacher PD ensures a district relevant experience. The K-12 education landscape in Colorado has local control that allows for high variability in priorities, learning models, and support of standards from district to district. There are increasing numbers of districts and schools that operate autonomously and are able to make key decisions that benefit their staff and students. Such autonomy can offer more flexibility to act in innovative ways that best serve the needs of unique student populations. For instance, districts have the ability to adopt the proposed program if their specific need is to reduce the opportunity gap for diverse student populations and improve science instruction in schools. We believe the all-in-one-day model saves the district money, may promote more lasting teacher outcomes, and creates a memorable and fun learning experience for everyone involved.

d. How the project advances the institution’s strategic plan. The DMNS strategic plan includes the *Here Better* and *Community Voices* initiatives. This program and partnership model is in alignment and supports *Here Better* by providing improved access and removing barriers (opening our doors). The project is aligned with the purpose of the *Community Voices Initiative* in that it involves our community in the creation of museum programs, and revolves around community needs. Please also see the Strategic Plan Summary.

e. How the project address the goals of IMLS Museums for America. The proposed project supports the Museums for America Learning Experiences goal to develop and provide inclusive and accessible learning opportunities, in this case for 16,000 students and 600 teachers in the Adams 50 and Mapleton elementary (and K-8) schools. This project leverages the unique resources and expertise of the DMNS to further formal education learning goals and break down the cultural and economic barriers preventing under-resourced schools from utilizing the museum. The enhanced level of access and learning support helps the DMNS fulfill its role as a critical community asset. These authentic and mutually beneficial relationships with districts strengthen the DMNS’ ability to serve its public by facilitating access to underserved audiences that historically have not visited museums, listening to a community need and responding in a co-creative and collaborative manner, and supporting school district goals toward greater student achievement.

2. IMPACT

a. Performance goals. The project will meet the IMLS Performance Goal to “Develop and provide inclusive and accessible learning opportunities.” Survey instruments will be developed as part of the overall evaluation plan that will measure the extent to which students’ *understanding* and *interest* in particular science topics increases as a result of their participation in the program. Our approach to this performance goal is detailed in the logic model in Appendix C and the Evaluation Plan in Appendix E.

b. Intended results. Overall, the long-term result of the program is a model that it is sustained in the two districts because it effectively meets their goals while making better use of limited financial resources and time. Another result is that the program can be adapted and replicated in other local districts to meet their needs.

c. Changes in knowledge, skills, behaviors, and/or attitudes. In addition to the student results captured by the IMLS Performance Goal, students will demonstrate increased excitement for learning science. Learning goals for both teachers and students will be advanced. Teachers will increase their understanding and interest of selected PD topics, will use their learning to enhance classroom practice, and will extend the impact through discussions with other teachers about applying what they learned. Districts will realize cost and time savings while also being able to offer a more effective, district-relevant experience to teachers than they have been able to provide in the past. The unified district experience will result in deeper gains. We anticipate that the districts will find that the program is valuable enough to explore sustainability through a variety of options that will be developed and articulated (Logic Model – Appendix C).

d. Tangible products. Project staff (Davis and Barnes) will utilize evaluation findings, results of meetings with school districts, and a cost benefit analysis to produce a case study report. This report will detail the successes and challenges of using this model in the two target school districts and shared museum-district funding scenarios that will facilitate future conversations about sustaining the program in these districts as well as in other districts. The report will provide strategies for sustainability and replication that can be tailored to a variety of district needs and circumstances.

e. How benefit of the project will be sustained. Developing strategies for sustainability is built into the project as a distinct goal. DMNS will continue to focus efforts on underserved and under-resourced school communities, so pinpointing the cost and benefits of running this program in the case study report is critical to the conversation about sustainability.

3. PROJECT DESIGN

a. Specific activities to be carried out.

- **Initial educational plan and logistics meeting.** Representatives from Adams 50 and Mapleton school districts will meet individually with DMNS project staff to identify participating schools, select target date

range for field trips to DMNS, and discuss educational plan and maximum impact for students through Field Trip Adventure program choice. In addition, a collaborative approach will determine how best to construct the field trip experience, define the intent and theme, and co-create and facilitate PD.

- **Collaborative program planning and co-creation of PD.** District representatives will meet with the DMNS PD team to identify and establish (1) district goals for teachers, (2) inquiry framework, (3) PD learning objectives, (4) goals for classroom implementation, and (5) resources to be developed and provided for teacher use. The same team involved in the collaborative planning will follow up after the event.
- **Professional development and field trip dates secured and planned.** Acting on outcomes of the planning activities, the DMNS onsite program coordinator will book a date and build an agenda for students and chaperones. In addition, programs will be booked, bus fuel stipends applied, program staff assigned, and school reservations made. The agenda and activities for professional development will be co-produced by DMNS and district staff, materials purchased by DMNS, and studio space secured.
- **Opening museum doors Field Trip Adventures and teacher professional development.** On the day of their experience, students and chaperones (provided by both the districts and DMNS) will spend approximately four hours at the Museum. Students will participate in interactive Field Trip Adventures, which maximize the learning impact of limited field trip time and support Colorado Academic Standards. Content of Field Trip Adventures will vary based on district desires. However, two sample itineraries are below for illustrative purposes:

Heart Lab Adventure (Grades 3-5)
This experience includes an hour and twenty minutes in a health studio with students exploring anatomy of the human body and discovering how their organs work together through hands-on investigations and small-group dissections of real sheep hearts. After a break for lunch, students return to explore the exhibition, Expedition Health. This 10,000-square foot exhibition uses interactive exhibits and a mountain-climbing theme to help visitors learn about the science behind their amazing bodies. Students spend an hour experiencing highly interactive and personalized activities, immerse themselves in a theater experience that engages all of their senses, look at microscopic cells from their own bodies in a laboratory, participate in live demonstrations and programs, and meet new "buddies" who help them learn about their health.
The Bear Necessities Adventure (Grades PreK-2)
In this adventure, students spend 45 minutes in a facilitated program in which they dress up and act like bears in the Colorado forest to learn about bear habitats, food, and hibernation. Students then explore in Discovery Zone, a nearly 10,000-square foot exhibition for early learners, for 45 minutes, followed by a lunch break then exploration in the bears and sea mammals and North American wildlife diorama halls.

The teachers will spend their four hours in a custom, co-created PD session facilitated by DMNS project staff. The specific content for Mapleton and Adams 50 teachers will be determined as a part of the collaborative development process, however, the agenda and activities for the fall 2015 PD for Adams 50 is included here as an example of co-created content.

Fall 2015 Professional Development – DMNS and Adams 50
Objectives for the day: <ul style="list-style-type: none"> ● EXPERIENCE the Inquiry process using Inquiry Methods ● DESIGN testable questions & hypothesis and then TEST them ● UNDERSTAND & IMPLEMENT the 5E model of Inquiry ● RECOGNIZE that there is a Continuum of Inquiry and MAKE A SHIFT in their lesson plans
Teachers are welcomed and given refreshments and an introduction to Inquiry and Science Practices (Next Generation Science Standards). In small teams, the teachers participate in the same inquiry activities that their students might, using the DMNS hands-on physics program RocketWorks as a framework. RocketWorks is a DMNS program wherein students become the engineer and experiment with the basic principles of flight and motion as they design, create, and launch their own paper rocket. The teachers’ experience opens with a scaffolding activity that helps them to design a scientific investigation after observing a phenomenon. Just as their students might, the teachers begin with ‘I wonder’ statements to develop questions, identify elements that can be changed (independent variables) as well as observable or measureable elements that might result from these changes (dependent variables). After choosing one element to manipulate, one to observe or measure,

and ones to keep constant, the teachers arrive at a testable question and a hypothesis. They then build and test their rockets – and their hypotheses. Teachers discuss using the rockets to understand the 5E model and are coached on district guidelines for shifting lesson plans. Following a break for lunch, teachers begin working on lesson plans to incorporate Inquiry and 5E for immediate use back in their classrooms. Teachers leave with lesson plans and resources related to inquiry.

- **Research on Sustainable Models.** The Project Director and School and Teacher Collaboration Manager will lead this activity. They will conduct meetings with school districts in order to refine how the program is meeting district goals. They will research shared museum-district funding models for sustainability. The deliverable of this activity will be a report that will include Adams 50 and Mapleton as case studies with specific metrics around time and cost savings, challenges, and advantages.
- **Evaluation.** Process and outcome evaluation will be focused on outputs and both short-term and intermediate outcomes as described in the Logic Model (Appendix C). The evaluation plan is summarized in Appendix E. Evaluation methods will include reflective conferences with program staff (for process evaluation), tracking of outputs for student and teacher participation, student observations (while at the Museum) and end-of-field-trip survey, pre- and post-surveys of teachers, principal phone interviews and post-surveys, and observations of meetings with district personnel. An interactive, age-appropriate survey technique will be used to capture student’s increased interest and knowledge on particular science topics. For feasibility, a statistically significant representative sample of students will be surveyed. Teachers will take a pre-test and post-test at the beginning and end of the PD to measure changes in knowledge and interest, and to assess intent to implement learning and engage in ongoing conversations about PD. Follow-up interviews with principals will capture information about value to the schools, and follow-up surveys with teachers and principals will measure ongoing student impacts, implementation in the classroom, and follow-up discussions on applying what teachers learned through the PD. Observation of meetings with districts will yield process and outcome data about the nature and results of collaboration, the extent to which the program meets district goals, and potential for sustainability.
- **Dissemination.** Project staff will propose the project for conference presentations and publications of professional associations. Project results will also be shared through a special dissemination event hosted by DMNS. These activities are also described in section 3.f below.

b. Project team. The team is comprised of individuals who bring together expertise in formal and informal K-12 education, project content, student experience and program design, teacher PD, logistics planning, and program evaluation (also see attached resumes). Time commitments are described in the budget justification, and all DMNS staff are contributing their time to the project as cost share. Key project staff includes:

Elizabeth Davis, Director of Museum Programs, has over 20 years of experience in informal museum education, with particular focus on education for adults, children, and families. As the Project Director, she will be responsible for overall project direction and supervision, will convene project team meetings, assist with dissemination efforts, and lead preparation of progress and final reports.

Krista Barnes, School and Teacher Collaboration Manager, has been an educator in Colorado for over 10 years and is responsible for leading DMNS teacher professional development, advocating for school and teacher audiences, and expanding the Museum’s strategic alliances. Ms. Barnes will oversee all phases of the program, review the project deliverables, manage partnerships with school districts, and assist in dissemination activities.

David Allison, Onsite Programs Manager, has over 10 years of informal education experience and helps to create and sustain high-quality shows and facilitated experiences for visitors of all ages. He also led the development of Field Trip Adventures. Mr. Allison will oversee educational planning for Field Trip Adventures and assist with management of partnerships with school districts and dissemination activities.

Robert Payo, Teacher Professional Development Coordinator, has extensive experience planning, developing, and implementing teacher PD programs and is recognized nationally for his leadership in the field. He will lead the DMNS professional development team including the collaborative discussions and co-creation of the plan

and goals for PD with district representatives. He will co-lead programs (with district liaison if that is the design), create materials, and work with the districts to co-develop curricular activities and classroom resources.

Tim Blesse, Teacher Professional Development Coordinator, develops and leads many of the DMNS teacher PD programs, including facilitation of teacher PD in support of the partnership program, Passport to Health. He will work with district representatives, Payo, and Rummel to co-develop and present the PD.

Emily Matthews, Onsite Programs Coordinator, manages the schedules, resources, and daily logistics for onsite education programs. Ms. Matthews has led Field Trip Adventure planning with Adams 50, and for this project, will co-lead in the educational plan, logistics, organization, and agenda creation with each school for their students' Field Trip Adventure and be the point person on the day of their visit.

Melissa Rummel, Lead Educator Teacher Professional Development, has led dynamic programs for the DMNS school and teacher audience for three years. She is a former classroom teacher and as such, is particularly strong demonstrating the value of informal/formal partnership in education. She will work in collaboration with district representatives, Payo, and Blesse to co-develop and present the PD.

Educator/Performers. DMNS' team of educator/performers will lead the field trip experience for the students and chaperones. All members of the team are trained to run all student programs and will be assigned to this project through the typical scheduling process carried out by the Education Operations Manager. Because the project participants are majority Latino and many speak Spanish at home, bilingual (English/Spanish) educator/performers will be used whenever possible. Many of our educator/performers are also bicultural.

External Evaluator. DMNS will contract Maggie Miller Consulting to carry out the evaluation plan. Ms. Miller has conducted evaluation for several collaborative programs between museums and school districts, all of which included significant professional development components. Her collaborative style is complemented by her high standards for rigorous evaluation, and results in useful data during program creation and implementation, and clear data about outcomes. The evaluator will be supported by grant funds.

Additionally, the project will be supported by the Museum Programs Project Coordinator who will assist with grant expenditure tracking.

c. Sequence of activities. Project planning with school districts will begin three months in advance of each Field Trip Adventure and PD series. For example, planning with Adams 50 will take place Oct – Dec 2016 leading up to that district's Museum visits occurring Jan – Feb 2017; planning with Mapleton will take place June – Aug 2017 leading up to their museum visits occurring Sept – Oct 2017. This sequence will repeat in 2017-2018. Research related to sustainable models, which will often occur concurrently with evaluation activities, will take place throughout the grant period. Baseline information on district needs and goals will be collected in Nov 2016, and we will follow up with the districts as well as teachers in the month following each series of museum activities. A sustainability report will be completed by Nov 2018 so that it can be shared in final dissemination activities in Nov – Dec 2018 along with the final evaluation data.

d. Resources. The project cost of \$273,215 includes \$135,604 requested of IMLS and \$137,611 in in-kind, non-federal cost share. The Museum's in-kind contribution is comprised of personnel \$101,904 (salary and fringe) and indirect costs totaling \$35,707. IMLS funds would support teacher PD resources (\$20,000), bus stipends so all schools do not have to incur costs for bus transportation (\$46,575), the external evaluator contract (\$29,843), funds for a dissemination dinner event for teachers and district representatives at DMNS (\$4,000), and associated indirect costs (\$35,186).

e. Tracking progress. Key project staff will meet monthly to review progress against the schedule of completion. This process will facilitate timely adjustments to keep project activities on track. The DMNS quarterly billing cycle provides another opportunity to compare actual expenditures to projected budget match.

f. Dissemination of project results. Project staff will propose the project for conference presentations and publications of professional associations such as NSTA, ASTC, and CAEE. Results will be shared internally, with participating districts, and with professional development colleagues and peer organizations. Additionally, DMNS will host a dissemination event which will also serve to convene the districts and other stakeholders.

SCHEDULE OF COMPLETION

PROJECT YEAR	Year 1													Year 2													Year 3		
CALENDAR YEAR	2016			2017										2018															
MONTH	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		
1. Project Planning with Districts and Project Administration																													
Adams 50 - Overarching and logistics planning																													
Adams 50 - Collaborative program planning																													
Adams 50 - Book dates, build agenda, purchase supplies																													
Mapleton - Overarching and logistics planning																													
Mapleton - Collaborative program planning																													
Mapleton - Book dates, build agenda, purchase supplies																													
Monthly meetings for project staff																													
Project Director prepares and submits reports to IMLS																													
Department Project Coordinator tracks grant expenditures																													
2. Field Trips and Professional Development																													
Adams 50 - Implementation																													
Mapleton - Implementation																													
3. Research on Sustainable Models																													
Meetings with district personnel - Adams 50																													
Meetings with district personnel - Mapleton																													
Research shared museum-district funding models																													
Case Study/sustainability report complete																													
4. Evaluation																													
Observation of meetings with district personnel																													
Student observations and post-survey																													
Teacher pre/post surveys (at time of PD and 4 weeks later)																													
Principal phone interviews (1 week after PD concludes)																													
Principal surveys (4 weeks after PD concludes for district)																													
Monthly meetings with project staff to reflect on progress																													
Tracking of output data																													
Evaluator to assist in preparing articles for dissemination																													
Evaluator to assist in preparing data for reports to IMLS																													
5. Dissemination																													
Submit project for conference presentations and publications																													
Dissemination event hosted at DMNS																													