



Museums Empowered

Sample Application ME-245705-OMS-20
Project Category: Evaluation

Tennessee Aquarium

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|-------------------------|-----------|
| Amount awarded by IMLS: | \$108,481 |
| Amount of cost share: | \$135,899 |

The project description can be viewed in the IMLS Awarded Grants Search:
<https://www.ims.gov/grants/awarded/me-245705-oms-20>

Attached are the following components excerpted from the original application.

- Narrative
- Schedule of Completion

Please note that the instructions for preparing applications for the FY2021 Museums Empowered grant program differ from those that guided the preparation of FY2020 applications. Be sure to use the instructions in the Notice of Funding Opportunity for the grant program and project category to which you are applying.

Project Justification

What need, problem, or challenge will your project address, and how was it identified? The Tennessee Aquarium (Aquarium) desires to develop a culture of evaluation across its departments. In their most recent standards, the Association of Zoos and Aquariums (AZA) has increased the level and detail of evaluation that it expects from member institutions. Many zoos and aquariums, including the Aquarium, lack a culture of evaluation practice. As identified in our strategic plan, we aim for high quality programming and guest satisfaction rankings. Current methods of evaluation at the Aquarium include customer satisfaction surveys, limited observations, interactions during and after programming, verbal and written feedback, and “secret shopper” participation. We have found that these current methods of evaluation are proving inadequate as the Aquarium aspires to develop a comprehensive understanding of the knowledge our visitors gain during a visit and how we could enhance our programs and interactions with them. In order to improve programs, communication with stakeholders, and accountability to accrediting agencies, we strive to build a sustainable evaluation culture within our organization that relies on data-driven decision making and a deep understanding of our audience.

Are others addressing this need? What other studies or best practices have you used in developing your project? In 2016, the Creative Discovery Museum, the local children’s museum, received an IMLS Museums for America grant (#MA-10-16-0291-16), which supported the development of a consistent and sustainable evaluation process. As part of that grant, the museum created the Chattanooga Evaluation Group, a collection of informal educators from local institutions focused on evaluation in their respective organizations. A few educators from the Aquarium have participated in these meetings since 2016 and developed some understanding of evaluation methods and processes. The Aquarium is now at a point where we need to develop an organization-wide plan focused on evaluation, take part in in-depth learning sessions, and involve additional staff to develop a true culture of evaluation. The specific activities for this project have been guided by the multidisciplinary model for evaluation capacity building (ECB) put forth by Preskill & Boyle (2008) and the additional framing offered by Labin et. al’s (2012) integrative model for ECB. These ECB models identify several key tenets that must be considered when embarking on an evaluation endeavor. For example, there is a range of outcomes that one can target depending on the motivations of those involved in the effort as well as the organization’s ability to incorporate capacity building into its operations. The ECB model proposed by Preskill and Boyle (2008) identifies motivations, assumptions, and expectations as factors to consider when designing this type of plan.

Who or what will benefit from your project? In the short term, the activities of the project will focus on developing staff understanding of evaluation across multiple departments (i.e., education, husbandry, marketing, and visitor services). An increased understanding will allow us to better focus on our desired outcomes, ways of measuring those outcomes, communication about programs, and our visitors’ experiences. Because we will invite the Chattanooga Evaluation Group to general workshop sessions, this broader set of informal learning organizations will also benefit from the project. The Aquarium will then take part in more focused sessions to help develop our own staff and plan. Through this project, Aquarium staff will not only have the opportunity to learn, but also practice our knowledge through increasingly independent projects. This will lead to the Aquarium having a sustainable culture of inquiry and evaluation by the end of the project.

In the long term, these activities will better support us in serving our guests with improved programs and institutional effectiveness. We will also be able to better develop exhibits, provide clear data to our funders, and offer evidence-driven information to leadership. We will also offer support to other organizations, particularly in the southeast, as we share our skills and knowledge about evaluation and about ECB to other institutions that may not be able to take on a large, cross-departmental evaluation project.

How will your project advance your institution’s strategic plan? To know whether we are fulfilling our mission of inspiring a broad audience to make informed decisions about water and wildlife and to understand how to effectively deliver conservation messages, it is imperative that we have a culture of evaluation to consistently learn about our audience and outcomes. Furthermore, the Aquarium’s Strategic Plan informed the

creation of a dedicated Education Strategic Plan (see supportingdoc1.pdf for Education Strategic Plan). One of the goals in the Education Strategic Plan is to be a leader in informal science education by engaging in regular research and evaluation to make use of and contribute to advances in the field. This project will support the Education Department and the entire Aquarium in building the capacity needed to carry out the evaluation work that will help us better serve our visitors with effective programs and messages.

How will your project address the goals of the ME initiative to strengthen the ability of an individual museum to serve its public through professional development activities that cross-cut various departments to generate systemic change within the museum? This project will strengthen the Aquarium's ability to improve programming, better communicate results, and provide evidence-based information to our accrediting agency (AZA) through professional development that builds our capacity in evaluation. This will have *institutional impact* because it will involve staff in the Education Department, along with select staff that are involved in programming and marketing from other departments. By working cross-departmentally on the project, it will help us to develop a culture of evaluation throughout the Aquarium. The project is designed to ensure that we build both individual and organizational capacity to engage in and sustain evaluation practice by using consultants who have a great deal of experience in ECB, particularly within AZA accredited zoos and aquariums. We will bring in a consultant, Inform Research and Evaluation (Inform), with in depth knowledge to ensure that we are able to explore the theory and practice of evaluation, learn about common strategies for data collection and analysis, and create a sustainable evaluation system that will continue beyond the three-year timeline of this grant. The activities are designed to scaffold Aquarium staff learning through a project-based design. While the initial work will help the core group learn about evaluation, staff will also design an evaluation project in collaboration with and with coaching from Inform. This larger project will be followed by smaller projects that we evaluate with Inform stepping back and acting in more of a support role. By beginning with training, then having multiple projects with increasing independence, it will help the Aquarium to develop a deep understanding of both the knowledge and the skills related to evaluation. This will support us in developing a sustainable culture of evaluation.

How will your project align with one of the four project categories? Our project aligns with the *Evaluation* project category. While we have a few individuals on staff who have some experience with evaluation, we would like to develop a culture of evaluation across the Aquarium. Identifying our education challenges and successes will not only improve staff and volunteer capacities and abilities, but also help the organization to better communicate and create engaging programs and exhibits. Data collection and analysis will provide concrete evidence to support our transition towards an evaluative culture. Armed with this information, Aquarium staff will be able to see areas in which goals are being met, investigate factors contributing to successful interactions, and to think critically about ways to improve and expand where we are less successful. As the staff becomes more involved and adept in evaluation, they will gain support and tools which will lead to new opportunities for individual, departmental, and organizational growth as well as project sustainability. Additionally, the Aquarium will be better able to identify the point at which full time evaluation staff or an evaluation department might be needed.

Project Work Plan

What specific activities, including evaluation, will you carry out? The ECB work plan for this project will incorporate the following primary activities to achieve outcomes: (1) outcomes framework, program review and ECB planning, (2) ECB trainings, (3) evaluation tasks with coaching, and (4) participatory implementation. Each of these activities plays an important role in moving the Aquarium closer to a sustainable evaluation culture. These activities will be facilitated by the consultants at Inform and include staff within departments listed in the table below. Throughout the project, Inform will carry out formative evaluation using surveys and interviews to monitor project progress. We anticipate that these methods will help determine whether Aquarium staff has shifted toward more of an evaluation mindset over the course of the project and at what point full time evaluation staff can be considered.

| Departments Participating | Number of Participants |
|---|----------------------------|
| Education | 6 |
| Conservation Science | 2 |
| Marketing and Communication | 2 |
| Husbandry | 4 |
| Other Departments/Additional Participants From Listed Departments | Up to 4, based on interest |

(1) Outcomes Framework, Program Review, and ECB Planning

In January 2020, prior to the project period, 8-10 staff from the Education, Visitor Services, and Husbandry departments at the Aquarium will take part in a Reaching Our Audiences by Developing Mission Aligned Programs (ROADMAP) workshop. Developed at the Denver Zoo, this program strengthens engagement and increases impact with guests. The training will introduce select Aquarium staff to a Guest Interaction Guide, which includes tools for creating connections with guests in age-appropriate ways, Program Content Standards that help focus program content, and a Program Design template to help all program developers follow an outcomes-based process to guide the development of their programs. Participants will include staff from the departments of education, visitor services, marketing, and husbandry. We will develop our own framework based on ROADMAP throughout Spring 2020. This framework, particularly the education outcomes determined for the Program Design template, will be a key resource in guiding the evaluation work proposed here. The final product will anchor the Aquarium in a common understanding of education intentions, provide a starting point from which to identify areas of inquiry for evaluation, and will become a central part of the Aquarium's evaluation system.

At the start of the project period, Inform will guide Aquarium education staff through completing a taxonomy of current Aquarium science education programs, using the new framework and making recommendations for realignment as necessary. The consultants will also finalize their ECB plan taking into consideration the ROADMAP and program review. Inform will also set up an online portal to be used as a resource hub throughout trainings.

(2) ECB Trainings

Preskill and Boyle suggest assessing the evaluation competence of potential capacity building participants before designing the effort so as to best to match strategies with intended outcomes and the current operating context. Prior to designing and implementing the ECB trainings, Inform will conduct a needs assessment of the participating staff. The needs assessment will be based on Prochaska's Stages of Change (1992), which recognizes that change and adoption of new practices, such as evaluation, are a gradual process that progresses through various stages. Framing the participants' current interest, knowledge, and skills around evaluation will guide the depth and breadth of the evaluation topics to be covered in the trainings. This also provides a baseline from which to compare participant growth in their evaluation competencies at the end of the project. Inform will then develop a customized ECB roadmap, a work plan with the specific training content, and an evaluation vision for the organization. The trainings themselves will be a combination of in-person and web-based. The in-person trainings will focus on hands-on experience with evaluation content and practices. The web-based trainings will present more in-depth content and highlight examples from other zoos and aquariums. All trainings, in-person and web-based, will be open to members of the Chattanooga Evaluation Group and foster a collegial learning environment within the community. This inclusive approach to evaluation training will help bolster the evaluation conversation across organizations and ultimately will have a broader impact.

(3) Evaluation Tasks with Coaching

Throughout the ECB process, Inform will provide technical assistance and coaching. Technical assistance may include reviewing and supporting revisions of current data collection instruments, supporting the development of program logic models, supporting the writing of new data collection instruments, and so forth. Between trainings, participants will be assigned specific tasks to apply the content and skills covered in the trainings. Inform will review the deliverables on those tasks and provide feedback. In addition, each participant will work in a small group with two to three other participants to complete an assigned small, focused evaluation project over six months. Throughout this time, each small group will engage in a minimum of two coaching sessions

per month to get additional guidance and support from Inform. This will allow participants to begin putting what they have learned into practice while still having guidance from experts. Inform will work with the project team to develop foundational evaluation documents, such as evaluation plans and question banks. These instruments will assist the Aquarium in establishing an evaluation system.

(4) Participatory Implementation

During participatory implementation, each participant will work to apply what s/he has learned in a new small group to design and implement an evaluation project more independently than in the previous stage of work. While Inform will still be available to assist participants, they will serve in a role that helps to clarify tasks and answer questions as they fade the scaffolding of the work. This will help to ensure that Aquarium staff is ready to sustain the evaluation process after the project is complete. To make the participatory implementation evaluation work authentic and meaningful, it will be directly related to the mobile cart programming conducted in the galleries. This project's ECB process engages Aquarium staff from different departments across the Aquarium. Coming together to do small group work that is directly tied to an Aquarium need will help demonstrate the broad applicability of evaluation across the organization. In this work, each group will be tasked with choosing an audience, existing mobile cart program, and a location within the Aquarium on which to focus their evaluation project. Small groups must complete an evaluation from beginning to end, including establishing evaluation questions, identifying data collection methods, selecting and/or developing instruments, collecting data, analyzing data, and engaging in the interpretation of their findings.

What is your project's maturity level (i.e., exploratory, piloting, scaling, or mainstreaming)? Although this project builds on a need established through our work with the Chattanooga Evaluation Group and changes in AZA accreditation standards, we feel that the focus of this work is different and thus puts it into the exploratory category. The work plan for this project has been developed by Inform and the project team. Discussions of the Aquarium's needs and readiness for ECB laid the foundation for the work plan, coupled with Inform's extensive experience carrying out these activities with similar organizations.

What are the risks to the project and have you identified ways to monitor or mitigate risk in the work plan? Potential risks to the project include participant buy-in, time constraints, and staff turnover. These risks will be better assessed through the needs assessment just prior to launching the ECB process. This will help identify any potential challenges to gaining participant buy-in. Challenges can then be addressed through careful design of the training, tasks, and evaluation projects. The ECB work plan accounts for potential time constraints in providing ample time for the participatory implementation phase of the project. The group activities occur across the 3 years of the project to allow staff to navigate other work responsibilities and coordinate working with others. Staff turnover is inevitable; however, of the risks identified, this carries the least amount of concern for the Aquarium specifically. In the Education Department, across full time employees, the average time of service is currently over 9 years (range of 1 to 27 years). We see fewer turnovers than many comparable departments. In addition, the planned evaluation system will help with future staff turnover, and mentoring will help sustain the evaluation practice because the pieces of the system can easily be introduced to new staff. Inform will work with the project team to generate a training plan for new hires.

Who will plan, implement, and manage your project? The Aquarium's internal evaluation team includes Dr. Brooke Gorman, Director of Science Education, and Tipton (Betsy) Bowden, Educator II, who will coordinate and lead the project. Dr. Gorman previously spent 10 years working for BSCS (using her former name, Brooke Bourdélat-Parks), a nonprofit organization focused on science education. She developed instructional materials, facilitated professional learning for teachers, and participated in research and evaluation projects. She joined the Aquarium in August 2017 as the Director of Science Education and has worked to support the department in developing new programming opportunities, updating existing programs, and taking part in the Reflecting on Practice program. Betsy Bowden has been an Educator and Naturalist during her six-year employment, focusing on informal environmental education of guests, school groups, and community outreach. Betsy develops and conducts family programming by leading Nature Nuts, a monthly nature club for children and families; assists Title I schools in receiving financial assistance with Aquarium field trips; and directly interacts with guests by teaching educational classes and facilitating animal encounters. Her interest in evaluation stems from her own

experience as a beneficiary of a profound Aquarium learning experience. The consultants for this project will be Dr. Joy Kubarek and Dr. Brian Johnson of Inform Evaluation & Research. Inform is a program evaluation and education research consulting firm specializing in informal STEM and conservation learning organizations. Dr. Kubarek (former VP of Learning at Shedd Aquarium) and Dr. Johnson (former Director of Educational Research and Evaluation at the Wildlife Conservation Society) have more 20 years of experience in managing, evaluating, and researching informal science learning. Both Dr. Kubarek and Dr. Johnson are active members of AZA, among other professional affiliations, and both serve as peer reviewers on a number of peer-reviewed academic publications.

How does the makeup of the project team and collaborators provide an opportunity for the project to benefit from diverse perspectives, shared networks, and best practices? With Dr. Gorman's background in developing science education programs and Ms. Bowden's experience as an educator, Aquarium staff are well versed in educational programming. Bringing Inform into this project adds critical expertise in ECB, the capacity for coaching staff in evaluation, and broad perspectives and knowledge of best practices used in evaluation by institutions across the country. The diverse membership of the Chattanooga Evaluation Group adds perspective in how each partner conducts evaluations. The members of the group include the Creative Discovery Museum, Hunter Museum of American Art, Chattanooga Public Library, Chattanooga Zoo, Museum at Five Points in Cleveland, TN, Crabtree Farms, McWane Science Center in Birmingham, AL.

How will collaborations you have proposed be structured in a way that is equitable and mutually beneficial in order to strengthen your project? By collaborating with Inform, Aquarium staff participating will be able to complete regular duties during the project period. Additionally, Inform will bring their wealth of evaluation experience to the project. Cross-departmental participation will build capacity throughout the Aquarium to enable a cultural shift towards an evaluation mindset. Chattanooga Evaluation Group participation ensures further sharing of ideas among the broader community, and strengthens the project through an open discussion of lessons learned from other organizations in the community.

When and in what sequence will your activities occur? The proposed sequence of activities is based on previous ECB processes conducted by Inform. Prior to the project period, in January of 2020, the Aquarium will take part in ROADMAP training and will develop a framework during the spring. In year one of the proposed project, the consultants will conduct a needs assessment. As they do this, they will conduct the first evaluation training workshops. In year two, there are opportunities to revise the framework, along with training and support related to it. Inform will conduct additional evaluation training sessions and Aquarium staff will begin to put the new skills and knowledge to use in a large evaluation project with coaching from Inform. By the end of year two and into year three, the staff will split into teams to conduct several smaller evaluation projects, applying what they have learned in a comprehensive evaluation process, while still having the support of Inform. During this time, the Aquarium will also make a plan for sustaining evaluation work, including developing indicators of need for hiring full time evaluation staff. Additional details are available in the attached schedule of completion.

What time, financial, personnel, and other resources will you need to carry out the activities? The primary resource needed for the project is the financial support for the evaluation consultants (see [budgetjustification.pdf](#), and [supportingdoc2.pdf](#) for Inform letter of support). This investment will ensure that the staff has access to experts, can develop a deep understanding of evaluation purposes and methods, and has the support of coaching as they apply their understanding. We will also need staff time from the departments who are participating in the projects to work on the framework design and attend the training workshops. This effort is supported by the senior staff of the Aquarium and will not be a barrier to the work.

How will you track your progress toward achieving your intended results? Interviews that Inform conducts with participants will assess changes in attitudes and confidence toward evaluation. We will also use a retrospective pre-post instrument to determine changes in knowledge related to evaluation and will track the evaluation projects that other staff request at the Aquarium. As the culture of evaluation develops across the Aquarium, we anticipate that requests for evaluation will increase.

How and with whom will you share your project's results? We will share the project's progress and results across the Aquarium to ensure that all departments know that participants can support their work in programming, exhibit design, and marketing, with evidence-based information. We anticipate that this will lead to improved programming and exhibits for the public as well as increased support from donors and guest satisfaction. We further expect to share the results of the project with the Chattanooga Evaluation Group both directly through opening the project training sessions to them and after the project through sessions we lead for the group. This group comprises staff from institutions of varying sizes and operating budgets across Chattanooga and the region. Some of these institutions do not have the staff to undertake major evaluation projects; however, they are very interested in improving programming or ensuring their messaging is effective. Because this group already functions as a community of practice, we will be able to lead workshops or discussions about the effective methods and analysis that might be feasible for these groups. In this way, we anticipate that the project will have a broader impact on informal education in our region.

Project Results

What are your project's intended results and how will they address the need, problem, or challenge you have identified? The intended results of this project are to (1) ensure that a cohort of 14-18 Aquarium staff develop the skills and knowledge necessary to implement and sustain regular evaluation practice, (2) develop a culture of evaluation across the Aquarium by involving multiple departments, (3) determine criteria for when the Aquarium will need to hire full time evaluation staff, and (4) support other organizations in the region in their own evaluation practices through the Chattanooga Evaluation Group. The desire for these intended results came about because the Aquarium strives to achieve and exceed the high expectations put forth by our accrediting association, AZA. As an AZA member, we want to ensure that we are meeting the needs of our visitors and are systematically evaluating whether they have good experiences, learn new information, and look to us as a leader in conservation science. With this funding, we will advance our awareness, aptitude, expertise, and implementation of internal capacity building through proven formative and summative evaluation techniques with the goal of enabling our staff to increase the value and meaningful impact of every educational experience we provide (see supportingdoc3.pdf for logic model). We are constantly looking for new topics and scientific ideas to engage our guests and the application of evaluation during the participatory implementation phase of this project will help us better understand how to carry out comprehensive evaluation projects. Conducting capacity building at an organizational level requires targeting outcomes around cultural change and adoptive evaluative practices as well as establishing sustainable evaluation systems. In contrast, capacity building at an individual level targets more narrow, though equally important, outcomes of knowledge and skills gained around evaluation. This project will support a culture of evaluation at the Aquarium, and help us determine the point at which full time evaluation staff or an evaluation department might be needed.

How will the knowledge, skills, behaviors, and/or attitudes of the intended audience change as a result of your project? The ECB effort aims to develop participants' evaluation competencies, inclusive of evaluation knowledge, skills, confidence, and interest. More specifically, participants will:

- Build or expand skills in preparing for evaluation, including developing appropriate goals and outcomes, designing a logic model, developing an evaluation plan, and accurately applying different evaluation methods.
- Build or expand skills in implementing planned evaluation, including administering surveys, conducting interviews, embedding assessment, and conducting observations.
- Build or expand skills in analyzing data, including using descriptive statistics, interpreting qualitative data and understanding survey analysis.
- Build or expand skills in communicating findings, including telling the story, developing a reporting plan and crafting an evaluation presentation.
- Feel that they are qualified and prepared to implement evaluations.

From an organizational perspective, the targeted outcome is for the Aquarium to commit to a future culture that values and prioritizes evaluation as a way to continuously improve upon delivering on mission as well as to communicate impact.

What barriers might there be for others who may wish to learn from and/or adapt your results in developing their own projects? The Aquarium's large organizational size allows us to involve staff from a variety of departments in this project. These participants will not only have the support of Inform as they conduct training and practice related to evaluation, but will also have each other as a community working together to learn new knowledge and skills. Other organizations may not have as many staff who could be involved in a similar project, which could lead to slower commitment or skill development. Similarly, Chattanooga Evaluation Group members or other organizations lacking funds for consultants would not be able to provide a scaffolding approach to teach participants about evaluation. Without access to a scaffolded approach, they may not develop as rich of an understanding that allows them to apply their knowledge to new situations. We hope to develop as a leader in informal science education, particularly within the southeast, and would serve as a resource to support others in their own work.

How will the institution's internal capacity be strengthened as a result of your project? As a result of this project, the Aquarium will develop a culture of evaluation across the organization. We will develop the capacity to carry out our own evaluations through a variety of methods and in a way that provides meaningful results. This will allow us to make data-driven decisions about our programs and all aspects of the visitor experience. From this, we will better be able to communicate the impact that the Aquarium is having across our community, which is important for working with funders, developing relationships with community partners, showing our involvement as a vital part of the community, and expressing our effectiveness in sharing conservation messages with the public.

What data will you collect and report to measure your project's success? As a *Building Capacity* project, we will track performance measures (i.e., level of understanding, confidence in applying knowledge, and level of preparation to provide a program to address community needs). We will use surveys and interviews of the staff involved in the project to determine whether understanding has increased as a result of the project, whether staff are confident that they can apply what they learned in the project, and whether the organization is better prepared to provide programs that address community needs. We will also track whether other departments begin to make requests for evaluation projects from the participants in the project, showing that the culture of evaluation and data-driven decisions has increased across the organization.

What tangible products will result from your project? The project will result in several products including, but not limited to, a framework of education outcomes, an online portal of evaluation resources, recorded trainings, evaluation systems documentation, and completed evaluation projects. In addition, Inform will keep on-going records of the ECB process implementation and data collected about the ECB effort throughout the project duration. This will include needs assessment data, data from a mid-point survey to monitor progress, data from a final assessment of participant growth, and coaching records.

How will you sustain the benefit(s) of your project? The overarching goal of this project is to create an evaluation culture and system that is sustainable after funding from IMLS is complete. By building capacity of staff across departments through mentoring and training, we aim to develop a new culture of evaluation for our organization. Because we will take part in mentoring and training cross-departmentally, we have an opportunity to develop a new culture of evaluation our organization. Once we have established the framework and expectations for evaluation, we will be able to apply these skills to our wide variety of programming through the Education and Husbandry Departments, guest satisfaction surveys, and Visitor Services engagement with guests in order to revise our programs and actions to better meet the needs and expectations of our guests. We regularly revise the programs that happen in the Aquarium, classroom programs, and through outreach. We will be able to better evaluate the impact of these programs as a result of the project. Additionally, we will be able to assess the need for full time evaluation staff to further sustain the results of the project and the new culture of evaluation. Finally, because we are a larger organization in our area, we intend to be a resource for other informal institutions as they undertake evaluation projects within their organizations.

