



National Leadership Grants for Museums

Sample Application MG-249150-OMS-21

Museum of Science and Industry, Chicago

Amount awarded by IMLS: \$175,150

Amount of cost share: \$201,344

The project description can be viewed in the IMLS Awarded Grants Search:

<https://www.imls.gov/grants/awarded/mg-249150-oms-21>

Attached are the following components excerpted from the original application.

- Narrative
- Schedule of Completion

When preparing an application for the next deadline be sure to follow the instructions in the most recent Notice of Funding Opportunity for the grant program and project category (if applicable) to which you are applying.

Measuring Belonging to Address Social Exclusion in Museums

Project Justification

1.1. What we propose to do.

Museums have not been known as bastions of diversity. Due to systemic racism, elitism, valuing commerce over equality and other reasons, museums have historically been designed by the few for the few. Today museums are beginning to recognize this as they drive to become more equitable and community focused. But the process is long, difficult and complex. To help direct and amplify those winds of change, we need to learn more about the causes and consequences of these inequities on our guests.

Recent scholarship has uncovered an underlying current on which many of these inequitable mechanisms float - *social exclusion*. Often, groups that are marginalized, disenfranchised and discriminated against find it “unthinkable” to visit museums (Dawson, 2014). Those who do participate tend to come from more privileged backgrounds (DeWitt, 2017). Overly designed spaces can be seen as elitist and reflect existing power dynamics (DeWitt, 2017), and large museum spaces are often designed to make people feel small (Berger, 2005) and disoriented (Archer, Dawson, Seakins & Wong, 2016) to impress a sense of power and/or awe upon them, consciously or not. Staff can also give the impression that guests from marginalized populations do not belong by applying special rules to them (ex: closing an exhibit early or giving constant reminders to behave) (Archer, et al., 2016). All of these reasons, and more, can cause guests who are marginalized in society to feel “othered” and that the museum was not built for them (Archer, Dawson, Seakins, DeWitt, Godec & Whitby, 2016). While they may still have an enjoyable and educational experience, it is mainly due to their ability to accommodate – a skill developed through dealing with similar inequities throughout life (Tatum, 2017).

Museums have been touted as agents of social inclusion for decades (Newman, A., McLean, F., & Urquhart, 2005; Sandell, 1998). But attendance trends have not reflected progress. According to the most recent AAM report, 9% of guests were nonwhite, while 34% of the U.S. population was nonwhite (AAM, 2017). One reason is that, until recently, most of the focus has been on what museums can do to be more *inclusive* with relatively little effort put into studying what they are doing to *exclude* guests - perhaps to accentuate the positive and avoid difficult discussions about what they are doing wrong. Bourdieu, Darbel & Schnapper (1991) even put the blame squarely on the museum guest when they said, “Only those who exclude themselves are ever excluded” (p. 37). From the perspective of diversity and inclusion, that is an example of the tail wagging the dog.

A sense of belonging is an essential part of feeling socially included. Maslow (1958) identified it as the most fundamental psychological need of humanity (just above the physical needs such as safety). Psychologists often define belongingness as how one fits in with a social system or environment. The concept of fitting in/inclusion and *not* fitting in/exclusion, is core to a sense of belonging (Hagerty, Lynch-Sauer, Patusky, Bouwsema & Collier, 1992), as reflected in the center of the model of belonging we use for this study (Figure 1).

Numerous instruments exist to measure belonging (see Malone, Pillow & Osman, 2012 for a review). But no one has studied it in museums or cultural institutions, despite belongingness being recognized as a barrier to bringing estranged audiences into cultural settings (Bonnici, 2019; Daenekindt, 2019). Due to the unique experience and personal impact museums can have on people (Smith, 2014), we believe a new instrument, with its roots in existing literature, is needed to measure belonging in museums. **By measuring how guests feel they belong (or don't) in museums, we can learn more about our audience and what makes them feel included or excluded. This could be the skeleton key needed to help unlock truly effective institutional change strategies and make museums more socially inclusive for everyone.**

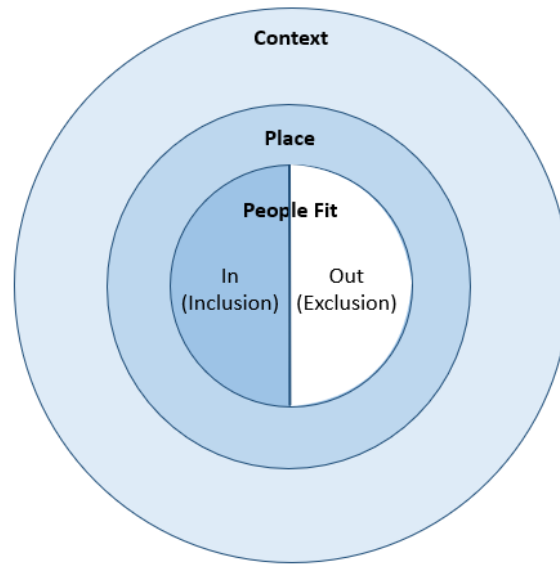


Figure 1. Our model of belonging.

Over the past year, The Museum of Science and Industry, Chicago (MSI) has been developing and validating an instrument to do just that. Our *Instrument to Measure Belonging in Museums and Cultural Institutions (IMBMCI)* has gone through two rounds of rigorous pilot testing and psychometric development. We have an easy-to-use, psychometrically sound survey instrument with good reliability and validity. (A manuscript describing the process is currently in preparation for the journal *Curator*.) However, to make it genuinely rigorous and useful to the community, we need to do further testing and development. This includes:

1. **Test the IMBMCI** with a wide variety of museums of different sizes, content, location and audience demographics. We will also test with a comparison group of people who do not normally attend museums.
2. **Perform a cross-cultural validation** to see how guests of different cultural backgrounds respond to the instrument.
3. **Develop and test an age-appropriate version** for use by pre-adolescent and teenage guests.

These three projects will answer three research questions of interest to the museum field:

1. How do adult guests at a wide variety of museums and cultural institutions report a sense of belonging, and how does it differ among institution type, size and location?
2. How do adult guests at a wide variety of museums and cultural institutions define belongingness, and how is it related to their gender identity, sexual orientation, and racial and ethnic identity?
3. How can we measure a sense of belonging of pre-adolescent and adolescent children attending a science museum (MSI), and does it change according to whether they are visiting with a family or school group? Finally, how does it differ from adult responses, including those within their family?

And the final tangible products will be:

1. **An easy-to-use, short survey instrument** that *any* museum or cultural institution can deploy to measure belongingness in their institution, along with a guide about how to interpret and apply their findings.

2. **Three open-access, peer-reviewed research papers** describing our findings using the instrument to study belonging across institutional type, applying a cross-cultural analysis of the data and feelings of belonging associated with older children visiting museums.
3. **Raw survey data** from all our studies, released to the public via the Open Science framework (osf.org).

Specific field-wide needs this project will address.

***Problem:** Museum audience demographics do not reflect those of the greater national population.*

We recognize that access alone does not equal equity. But having an audience that reflects the community is a necessary (yet not sufficient) step in making museums more relevant to those same communities. We know from research that feeling excluded is one common theme for why some people would not even consider visiting museums. But we don't have much research on *why* they are feeling excluded.

***Problem:** Most research on this topic has been qualitative.*

Many reasons for the disconnect between museum attendance and the community have been proposed over the past half-century (Kytani, 2020). First, very little empirical data has been published on the topic. Most of the discussion has been in the form of thought-pieces and proposals. And while there has been some powerful, rigorous qualitative work done (mostly focused on science museums), there has been little quantitative work. This makes generalization difficult and, because qualitative work is resource-intensive, means that museums with small (or nonexistent) research staffs are largely left out of the conversation.

***Problem:** Why people do not come to museums differs by demographics, location, museum content, etc. Yet, the field has been searching for a one-size-fits-all approach.*

This leads to our second missed consideration: Museums are wildly different, and a localized approach to research is needed. The reasons some residents of a rural town don't visit their local town history museum may be very different from why some residents of a large metropolis don't visit their local science museum. We need a tool that is easily customizable by each institution to its local context and guest population.

***Solution:** Create a survey instrument that is easy-to-use and adaptable by any museum or cultural institution.*

The IMBMC instrument consists of 29 Likert items grouped into 3 main scales (Supporting Document 1 – the survey instrument). It takes about 5-8 minutes to complete. Each item is scored on a scale of 1-7 with 7 being Strongly Agree. The first scale consists of 12 items adapted from the General Belongingness Scale (GBS) by Malone, et, al (2012). It measures social inclusion/exclusion - how a person feels they fit in (or not) at a particular moment in time. The second scale consists of six items adapted from Jammitt (2009) measuring how attached a person feels to a specific physical space. The last scale consists of 10 items developed by our research team to measure how people feel a sense of belonging and agency concerning the context of the specific experience (hereafter: *Contextual Belonging Scale*). It was developed through interviews with domain experts and a review of the psychological and museum literature around belongingness. Finally, the instrument ends with two open-ended questions: “*What community were you thinking about when you answered these questions?*” and “*What does the word ‘belonging’ mean to you?*”. These are important for interpreting the rest of the survey results because the answers to those questions can vary based on cultural background and other group and individual differences. For example, in our pilot study, we found about 1/3 of guests defined community according to where they live and 1/3 defined it as their race/ethnic identity. The rest were spread out over a wide variety of topics (see *Project Maturity* for more on our pilot results). A paper describing the

creation and validation of the IMBMCI is in preparation with the intent to submit to a journal by the end of 2020.

Due to the survey’s brevity, institutions can piggyback items of interest to them, such as questions about demographics, prior museum experience, etc. (In our user guide, we will offer some example demographic items taken from the Collaboration for Ongoing Visitor Experience Studies (COVES) instrument which would allow the institution to compare their results to the greater field.) To deploy the survey, all they need to do is change a few words to reflect their institution type (ex: change “museum” to “zoo”). Our user's guide product will also include a section about how to analyze the data. For example, we’ll suggest categories they can use to code the open-ended answers and include an Excel spreadsheet template into which they can enter their survey results and have graphs and statistical comparisons automatically generated by preloaded formulas and macros.

But before the survey is shared, we need to test it with more audiences. And we need to create an age-appropriate version for children. We will use the survey on-site at a wide variety of institutions (art museums, cultural museums, history museums, zoos, aquariums, etc.) of varying sizes and geographic areas. We then will validate it with different cultural groups. This includes analyzing the inter-institutional data by race/ethnic identity but also doing cognitive interviews with guests representing various groups so we can learn about how they are interpreting the instrument questions. Third, children are a significant audience for museums and often more challenging to reach than adults (due to parental permission, preparing age-appropriate materials, etc.). We need to invest the time and resources into developing and testing a version that can be used with pre-adolescent and adolescent children. They are both future museum guests and they have an influence over how their older family members and friends feel at the museum. Finally, **we will test the instrument with a sample of adults who do not usually visit museums**, defined as those who have not been to a museum in the last ten years. We will recruit them through other non-cultural community organizations in Chicago and offer them free admission to visit. We will double the size of this cohort (to account for no-shows) and give surveys to half of them upon arrival at MSI and the other half when they leave at the end of the day. This will give us a measure of their feelings based on expectations/assumptions of the visit and feelings after the experience. Adult incentives include a \$5 gift card to Amazon.com (or equivalent) for surveys and \$25 for interviews. Children will receive a \$10 gift card for surveys and \$25 for interviews, but in the form of gift certificates to the museum’s gift shop. The non-museum goer group will also receive free family admission and parking.

1.2 Benefits for museums practitioners

The survey was developed with input from 10 experts in museums, who were interviewed individually to develop our model of belonging. They include museum floor staff, educators, exhibit developers, interpreters, evaluators – all from both art and science museums. Museum practitioners will have a tool they can use to learn more about how their guests feel *in* the museum and also *about* the museum, from a very personal perspective. This will help design spaces and experiences that are more inclusive for everyone. Beyond the tool, we will also share a set of data that practitioners can interpret their data against to help them generate their own findings.

1.3 Planned project collaborations

Our institutional partners in data collection reflect a variety of museum types, sizes and locations (Table 1).

Name	Annual Budget (millions)	Location
DePaul Museum of Art	\$0.5	DePaul University, Chicago IL.
National Museum of Mexican Art	\$4.7	Chicago, IL.

Oklahoma City Museum of Art	\$6.4	Oklahoma City, OK.
Berkeley Museum of Art/ Pacific Film Archive	\$10.0	Berkeley, CA.
Denver Zoo	\$44.6	Denver, CO.
Minneapolis Institute of Art	\$43.0	Minneapolis, MN.
Shedd Aquarium	\$62.9	Chicago, IL.
Museum of Science and Industry, Chicago	\$65.8	Chicago, IL. (Host Institution)
Field Museum	\$82.9	Chicago, IL.
Art Institute of Chicago	\$100	Chicago, IL.

Table 1. Collaborative Institutions

The advisory board will meet virtually throughout the project and communicate via e-mail. We invited eight board members due to special expertise and perspectives they have to offer: **Jefferey K. Smith**, Ph.D. is Professor and Dean of the College of Education at the University of Otago and served for 18 years as Head of the Office of Research and Evaluation at the Metropolitan Museum of Art. **Therese Quinn**, Ph.D. is Associate Professor and Director of Museum and Exhibition Studies at the University of Illinois, Chicago. **Kimberly Quinn**, Ph.D., is an Associate Professor of Psychological Science at DePaul University in Chicago, IL. As the head of the DePaul University Social Cognition Lab, she offers expertise in relationship connectedness and how people and physical spaces shape perceptions of the self. **Eric Wesselman**, Ph.D., is an Associate Professor of Psychology at Illinois State University and has conducted extensive research on social connection and exclusion. **Jeanine Pollard** holds a Master of Arts in museum studies from the University of Illinois Chicago. She has previously worked at the Center for Empathy and the Visual Arts at the Minneapolis Institute of Art and has held positions inside cultural institutions that emphasize accessibility for Deaf and Hard of Hearing individuals. **Faith Kares**, Ph.D., is the Senior Director of Research and Impact at Beloved Community, a non-profit consulting firm focused on implementing regional, sustainable solutions for diversity, equity, and inclusion (DEI). **Anthony Vitagliano** is the Vice President of Exhibitions and Engagement at MSI, and **Rabiah Mayas**, Ph.D., is the Ruth D. and Ken M. Davee Vice President of Education at MSI. The board will mostly confer via e-mail and virtual meetings, but one in-person meeting is scheduled as part of the 2022 American Alliance of Museums conference. In addition to their participation as data collection sites, we have asked a representative of each institution to join the in-person advisory board meeting to increase buy-in and promote equal collaboration while also giving the board greater diversity.

1.4 Alignment with the goals of National Leadership Grant for Museums: Research

Our research proposal directly aligns with the goals and objectives of the National Leadership Grant for building capacity. The goal of the current project is to understand how museum and visitor characteristics affect feelings of belonging or exclusion in museums. By partnering with a diverse set of institutions, we hope to *identify trends to help other museums make informed decisions*. Not only will our partner institutions have access to the IMBMCI, but we will also publish the tool freely to *encourage other organizations to adopt our tool* for their use. Additionally, we will provide interested institutions with instructions about how to code the data and a template for basic data analysis. In our user’s guide, we will include advice on how they can share their data publicly and also how they can lead discussions internally about interpreting their results to help their own institutions. These necessary supplements will allow institutions to assess belonging in their home organizations, thereby *training the museum workforce* to understand how belonging and exclusion affect their museums, while also increasing research and evaluation capacity across the field. Ultimately, we hope our work

leads to *policy changes and clarifies the need for inter-museum and community partnerships to address access barriers to programs and information at cultural institutions.*

As a research study, our project falls in the project category of **Data and Evaluation**. *Data collection* for our study will take place in museums across the country to *demonstrate the impact of belonging and exclusion in museums on people and communities*. Through surveys that will be implemented across institutions and cognitive interviews with guests representing groups of various racial and ethnic identities, we will be using *quantitative and qualitative methodologies to assess the needs of guests* around their feelings of belonging and exclusion. Survey and analysis tools are also being created to be as easy to use as possible, thereby encouraging *scale-up and replications* by other museums. Our broad collaboration and open sharing of tools and data will support *building the capacity of the museum sector* to understand guests' sense of belonging and will aid institutions in understanding how their museum affects that sense of belonging. Finally, our advisory board consists of a diverse group of museum professionals and university faculty to facilitate *partnerships between the museum field and higher education to further efforts to understand museum practice and its impacts*.

The project supports the goal of the National Leadership Grants for Museums program to address critical needs in the field and advance practice to serve the American public by providing a tool practitioners and designers can use to make their museums more inclusive and relevant to a rapidly diversifying American community.

Project Work Plan

2.1 Specific project activities as numbered on Schedule of Completion

Survey data collection. In Chicago and nearby areas, each partner institution has been offered the choice for our staff to collect data at their institution or for us to train their staff to do so. When we are on-site, our two intern research assistants will collect survey data under the supervision of the Researcher/Project Manager with a goal of 150 surveys per site (except 400 surveys for our comparison group of *non-museum* attending guests) for a total of about 1,900 surveys. Guests will be recruited within each institution as they approach the doors in preparation to leave. This is a strategy that worked well with us in a previous study (see *Project Maturity* for more information). Control group guests will be recruited through other non-museum community organizations, a technique that has worked in other museum studies of infrequent museum guests (Dawson, 2014). All sites outside of Chicago will be trained via virtual conferences in how to collect their own data (a small stipend is offered to them to offset staff costs they may incur). In our experience, the larger institutions should reach N=150 in just a few days, while the smaller institutions may take a month or two. All raw data will be returned to MSI for processing. Survey data with children will take place at MSI through recruitment of families with children on the museum floor and recruitment of teachers as they contact our Group Center to plan a field trip.

Survey analysis. Survey data will be analyzed through descriptive statistics and with relationships and comparisons analyzed using techniques mostly from the General Linear Model (GLM) and Rasch modeling. For example, ANOVAs will be run with survey item scores as the dependent variable and institutions as the independent variable. Survey data will be analyzed at the item and the factor (means) level. ANCOVAs or regressions will be applied when looking for relationships with controlling variables such as gender, age, race, prior museum experience, etc. There is considerable debate in the statistical world about how to handle Likert-style survey data since it is designed to be interval in nature (which is an assumption of GLM and most of the popularly used statistical models) but often not interpreted that way by guests. For example, the difference between “Strongly Disagree” and “Disagree” can vary between guests. By running the survey data through the Rasch Rating Scale Model, Likert data can be transformed into an interval scale using logits (Royal, Ellis,

Ensslen & Homan, 2010). Logits, or log-odds units, are the natural log of an odds ratio of a person's likelihood to agree with an item and the difficulty of an item to be agreed with (Ludlow & Haley, 1995). Those transformed variables, now truly interval in nature, can then be run through more commonly used GLM tests.

In this, and all of our analysis, we will treat racial and ethnic groups as distinct and will not collapse them into large categories such as "white" and "nonwhite". Collapsing racial categories creates issues for statistical analysis (it forces multiple-race responses into one) and for equity (it centers whiteness and perpetuates *othering*) (Mahiri, 2017; Teranishi, Nguyen, Alcantar & Curammeng, 2020). This is one reason why we recruited so many institutions. With a sample size around 1,900, we should have enough participants in most groups to do individual analysis for the more common racial and ethnic categories.

Cognitive Interviews and Analysis. For the cross-cultural validation, interviews (N = 40) will happen on-site at MSI. Cognitive interviews are an important method for improving the reliability and validity of surveys used in education research (Desimone & Le Floch, 2004). They help researchers learn more about how the survey is being interpreted. One method includes reading a sample of questions from the survey to the guests and having them answer aloud (Willis, 1999). The interviewer then probes for deeper reasoning. For example, to follow up with the survey question about feeling included by other guests, we may ask "Can you give an example of when you felt left out of a situation by another guest?" or "Can you compare this experience to another one you have had in life outside of the museum?". The analysis looks to see whether the guests interpreted the questions in the manner intended and whether there are systemic trends between those of different cultural backgrounds.

All research will be under the supervision of and approved by the Museum's Institutional Review Board.

2.2 Project maturity level

In 2016-2017, MSI ran a multi-institutional study of similar design to measure guest emotions related to awe as they left various museums (Price, 2019; Price, Greenslit, Segovia, Harris, Quinn, & Krogh-Jespersen, submitted). Lessons learned, along with relationships built during it, have informed the design of this project.

Our interest in this topic began while researching the issue of social exclusion in museums. Our exhibits team expressed the desire to design experiences that make everyone feel like they belong. In Fall 2019, we conducted interviews with experts and a thorough review of the museum, educational and psychological literature around belongingness to define our construct and model. A pilot survey was assembled the following Winter, and then we conducted two rounds of pilot testing. The first was online with recent guests of the museum in the Summer of 2020 and the second on-site at the museum in Fall 2020.

The goal of the first-round pilot testing was to test questions from two scales from the literature and a third scale of our own making. After the first round of testing, we edited the first two scales by removing items that were redundant and creating more strongly worded items when the original items showed ceiling effects.

Additionally, we conducted an exploratory factor analysis (EFA) on our newly created Contextual Belonging Scale to ensure that we measured a single latent construct. The results of the EFA suggested there were two factors instead of one. Based on factor loadings, we refer to the two factors as *equity* and *agency*. With only a small number of items loading on the agency factor and given its importance in the belonging literature and the expert interviews, we designed two new agency items and included them in the second round of pilot testing.

The second round showed the new items working well. A confirmatory factor analysis (CFA) of the Contextual Belonging Scale confirmed the same two factors: equity and agency. Also, descriptives showed differences between racial/ethnic groups (ex: guests who identify as Black or African American reported lower levels, on

average, of place attachment and slightly lower levels of contextual belonging). Guests also reported higher levels of belonging related to the museum *space* but lower levels regarding *other guests* – which was an unexpected finding we will dig deep into with this proposed study. There were also differences in guests' overall contextual belonging, with guests feeling higher levels of equity than of agency.

2.3 Project planning and management.

Project Director C. Aaron Price, Ph.D., will supervise and be ultimately responsible for the project's execution. He is the Director of the Research and Evaluation Department at MSI, which consists of five researchers and evaluators who measure the impact the museum on guests and the community. He has significant federal grant management experience as the PI or Co-PI of six awards from the National Science Foundation. The Researcher and Project Manager for the project will be Lauren Applebaum, Ph.D., who is a Senior Evaluator on the team. Both have 12-month appointments at MSI, so do not need supportive funding. Two interns will be hired.

A detailed Schedule of Completion is attached as a supplementary document. The project will begin in the Fall of 2021 with the hiring of the interns. Data collection for the first research question will occur at the various partner institutions in the Fall and Winter of 2021-2022. An advisory board meeting will be held in the Spring of 2022 to discuss results and progress. The Summer of 2022 will be dedicated to the cross-cultural validation study data collection. Analysis of that data will occur in Fall 2022 along with planning of the final study with pre- and adolescent children. Data collection with them will occur in Winter 2022-2023. Spring and Summer 2023 will be dedicated to preparing reports, research publications and all final products. This is a general timeline, in reality many of these stages will overlap (ex: we will likely be writing the literature review and methodology sections of our research papers while data collection is underway).

The following describe our specific responsibilities, which are aligned with specific activity numbers (ex: A1, etc.) in our Schedule of Completion. Dr. Applebaum will facilitate data collection for our survey instrument at all collaboration sites, with the two interns' support (A1, A2). Survey data collection at non-Chicago-based institutions will be conducted by the respective institutions but coordinated by Dr. Applebaum (A3). Recruitment and survey data collection of our control group will be completed by Dr. Applebaum and the interns (A4). Cognitive interviews of MSI guests will be administered by Dr. Applebaum, Dr. Price and supported by other members of the MSI Research and Evaluation team as needed (A5). Dr. Price and Dr. Applebaum will draft a pilot survey for pre-adolescent and adolescent children (A6). Survey data collection (A7), cleaning, analysis (A8,A10), and cognitive interview analysis will be conducted by Dr. Applebaum, who will mentor the interns in the process (A9). All manuscripts, including conference submissions, will be developed in collaboration with any partners who wish to participate. Research papers will be prepared by Dr. Price and Dr. Applebaum, with the interns' support (A12-A14).

Dr. Applebaum and the interns will complete the coding manual and analysis template (with Dr. Price's help). Dr. Price and Dr. Applebaum will co-lead the effort to inform the museum community of the tools we have tested and refined (A15). As professional development opportunities for the interns, each will help present results at a professional museum conference. The advisory board will meet (A11) at a midpoint, shortly after the institutional survey data collection has been mostly completed (so we can look at early results) and before the cross-cultural validation project and development of the child survey.

Time, financial, and personnel resources needed. The proposed period of this project is September 2021 to August 2023. This project requests \$175,751 in support to achieve proposed outcomes. The majority of this request will fund support for the partner institutions (\$31,000), advisory board stipends (\$16,000), hiring of two

part-time research assistants (\$33,062) and incentives for guests to participate (\$17,650). We request \$16,335 for travel for Dr. Price, Dr. Applebaum, and Interns to travel to the American Alliance of Museums to present work and \$5,801 for statistical software and transcription services.

2.4 Ensuring Diverse Perspectives and End User Engagement

All Museums are potential end-users of the insights and recommendations generated from this project. By involving museums of different types, sizes and geographic areas as stakeholders, we hope our findings and products will be generalizable and relevant. We also have advisory members working in academia, non-science cultural institutions (ex: an organization supporting the deaf community) and non-profits supporting institutional diversity and equity (ex: Beloved Community). Our data will be released via the Open Science Framework (osf.io) to support transparency around our findings and allow anyone to analyze the data in their own way. Our final survey and User's Guide will be released under a Creative Commons Attribution-ShareAlike 4.0 International license, and our research papers will be published in peer-reviewed journals (such as Curator, Visitor Studies or Museums and Social Issues) but under an open-access license.

2.5 Known project risks

Collecting data at such a wide variety of field sites is always a challenge. Coordination with staff, different leadership and project planning styles, audience attendance patterns and even weather can be an issue if collecting data outdoors. Also, collecting data at smaller museums can take patience since their attendance can be lower. But we have done this before with our awe study, so have learned many of these lessons. Finally, the COVID-19 pandemic's impact on museum operations and attendance in late 2021 and 2022 is unknown. We built flexibility into our timeline and can postpone data collection until as late as Fall 2022, if needed.

2.6 Tracking progress & Sharing results

MSI will track progress on data collection through the analytics provided by our survey software (Question Pro). Partner sites will be encouraged to distribute the surveys via a QR code that guests can load on their phones (with printed copies available upon request). We will monitor data collection in real-time. We also will have periodic check-ins with partner sites to get updates on the number of printed surveys being collected. Throughout the entire study, quarterly updates will be shared with the advisory board. Since data is being collected indoors, we are flexible as to what times of year we can collect data. So if we need to delay (due to COVID-19 or other reasons), we have plenty of flexibility in our schedule.

We will share research results via presentations at museum conferences and journal articles with open-source licenses. The final instrument and user guide will be published on MSI's website and the informalscience.org repository. We will also host a workshop showing how to use the instrument at a local meeting of the Chicago Cultural Organizations Research Network, an affinity group of practitioners and academics who do evaluation work in cultural institutions around Chicago. The workshop will be recorded and placed online.

Project Results

3.1 Intended results

For the first study, our hypothesis is that we will find differences in the types of belonging audiences report. For example, we expect to find guests relate to the physical space differently between museums with large, grand architecture and ones with more intimate architecture. We also think the intersection of demographics and context will matter. For example, students at DePaul University may feel they fit in more at their university's art

museum since it is organizationally and physically a part of the space in which they live. For the second study, we also expect to find differences according to race and ethnic identity. *In our pilot data at MSI, we already found that those who identify as Black/African American report slightly lower levels of overall belonging than other races.* Our cognitive interviews will hopefully shed light on why. We also expect to find differences in guests attending our cultural museums such as the National Museum of Mexican Art. Finally, we are unsure about how older children will respond to the survey. These are topics pre-adolescents and adolescents continuously consider – *Who am I?* and *Is this my group?* But they likely have not thought about it as formally. We are fascinated with how they will respond. We believe there will be interesting distinctions between their responses and with adults (also between children attending with school groups vs. families.)

3.2 Anticipated change in knowledge, skills, and behavior of the intended audience

Museums and cultural institutions that use this tool will learn much more about their audience. This includes, but is not limited to, how their audience feels when they are visiting the institution and how attached they are to it. The tool provides detailed information as well, not just overall numbers. For example, it will tell the institution how the audience feels about the physical space and the other guests. It will also educate institutions about *why* the audience feels that way. All of this information can help museums become more responsive and relevant to their communities. There could be impacts on marketing, architectural and space design, exhibition content, educational programming, hiring and much more. And the ease of use of the instrument will help build experience in research and evaluation for institutions that cannot afford their own teams.

3.3 Potential barriers to adoption of new practices

There will be tension around issues such as these. However, they are actually signs of growth. In a process evaluation of the development of a culturally responsive mathematics exhibit, Garibay (2017) found that tension in the process is required for people to let go of past assumptions and is a sign of deepening cultural competence. Some staff may not be ready for the results they see as they could challenge longstanding assumptions about who their audience is. For example, our pilot data result showing a diverse definition of “community” among our guests created some much-needed soul searching within some staff members who had not even considered that different meanings of “community” were possible.

3.4 Measurement of project success

The most important measurement is that institutions using it find it informative and that it drives positive institutional change. We will measure that directly through a survey and reach-outs to those who download the instrument, beginning about a year after it is placed online. Another indirect measure of success will be through the adoption of the instrument, which we can measure via downloads of the instrument documentation. A second indirect measure includes the publications of papers in peer-reviewed journals and conferences that show we followed scientific best practices from the field. Additional indirect measures include attendance at conference talks on the subject, citations and possible new avenues of research uncovered by the findings.

3.5 Sustaining the Benefits

The main products (the survey instrument, research papers and data) will all be released to the public domain, meaning anyone can use and build on them as needed and in perpetuity. The User’s Guide should make it accessible to smaller institutions that do not have specialized research and evaluation staff. If our impacts come to fruition, then the result of a more representative and relevant museum community will be a transformational change leading to a more equitable and impactful museum community.

Schedule of Completion

Schedule of Completion: Measuring Belonging to Address Social Exclusion in Museums									
		2021	2022				2023		
Activity	Description	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
<i>Coordinating & Planning</i>									
A1	Coordinate data collection at partner sites; hire interns								
A2	Distribute survey and train collection site partners for data collection								
<i>Survey Data Collection</i>									
A3	Survey data collection at MSI and partner sites								
A4	Survey data collection of control group								
A5	Cognitive interviews for cross cultural validation (MSI only)								
<i>Child Survey</i>									
A6	Child survey development and pilot testing								
A7	Child survey data collection (MSI only)								
<i>Data Analysis</i>									
A8	Data cleaning and analysis for survey data								
A9	Data organization and analysis for cognitive interviews								
A10	Data cleaning and analysis for child survey data								
<i>Collaboration</i>									
A11	Advisory Board Meeting								
<i>Distribution & Dissemination</i>									
A12	Research paper and report preparation: survey data								
A13	Research paper and report preparation: cultural validation								
A14	Research paper and report preparation: child survey								
A15	User guide, analysis templates and raw data published								