Chicago Public Schools

View xForm - Research Review Board (RRB) Submission

New RRB Submission

Data Entry
- Submitted 06/28/2024 12:16 PM ET by Applebaum, Lauren Ph.D.

Amendment Summary

RRB Number	2021-1687
Study Title	A Study of the MSI Science Leadership Initiative
Event Type	Modification/Continuing Review defined 06/28/2024
Schools Participating	400025 - CICS - Bucktown 609862 - Edward Coles Elementary Language Academy 609909 - Edward Everett Elementary School 609964 - John H Hamline Elementary School 610098 - Alfred Nobel Elementary School 610172 - William T Sherman Elementary School 610201 - Ole A Thorp Elementary Scholastic Academy 610218 - Joseph Warren Elementary School 610282 - Ronald E McNair Elementary School

Description of Research Activities to Date

The following key milestones have been accomplished to date:
-The 15 schools, 9 of which were CPS schools, enrolling in MSI's Science Leadership Initiative School Partners Program were contacted to participate in the research study. 13 schools in total, 8 CPS schools, opt-in to the research study.
1. Survey 1 consisting of baseline measures of science education practices and prioritization was distributed to schools who opted into participating to study in the fall of 2021. A total of 256 surveys were collected for Survey 2. Survey 2, completed at the end of Year 1 of the program, was collected in the Spring of 2022. A total of 261 surveys were collected for Survey 2.
-11 observations of SLI cross disciplinary school team meetings were conducted in the fall of 2021 and winter of 2022.
3. Survey 3, completed at the end of Year 2 of the program, was collected in the Spring of 2023. A total of 157 surveys were collected for Survey 3.
4. We will complete data collection for Survey 4 through June 7, 2024.

Preliminary Results to Date

We see modest increases on several of our measures from the beginning of Year 1 to the end of Year 1. We are currently analyzing longitudinal data from Year 2 and will be incorporating Year 3's data later this summer.

Type of Request

Modification	*Please select continuing review if no changes have been made to your study protocol. If you plan on proposing a modification AND a continuing review, please select modification, as an approved modification will extend your approval period.*

Indicate Proposed Modification Areas

Additional Research Staff

After summarizing your proposed modifications on this page, please update the following pages as appropriate. Please update all aspects of your proposal to reflect your proposed modifications. Any changes made within your proposal will be displayed as tracked changes to your assigned reviewer.

Addition of Study Contacts

Current study contacts:

Name	Role
Applebaum, Lauren Ph.D.	Primary Contact
Applebaum, Lauren Ph.D.	Principal Investigator
Felts, Nicholas PhD	Project Team Member
Mast, Fran M.Ed. Science Education	Primary Contact
Price, Aaron	Coordinator

Please use the table below to add additional study contacts. You will need to click "save" after each entry.

Contact Email Address	Contact Organization	Role	Study Responsibility
Mekala, Urvi **Email:** urvi.mekala@msichicago.org **Business:** (773) 753-2579	Griffin Museum of Science and Industry	Project Team Member	Will have access to individual-level student/staff data

Link to New Contact Form
User had the option to start a different form here.

Optional Attachments - please attach any reports/publications that have been created thus far here.

No answer provided.

Pertinent CPS Documentation

Submitter

Applebaum, Lauren Ph.D.

Email: lauren.applebaum@msichicago.org **Business:** (773) 753-2579

Overview of Pertinent CPS Documentation

The RRB is composed of members representing various Central Office academic departments as well as the Law Department. The RRB meets quarterly to evaluate new proposals to conduct research. The RRB calendar and deadlines for submissions can be found on the CPS Research Website here. Decisions resulting from the research review process will be communicated to the applicant of the request as well as appropriate CPS staff in accordance with the estimated timelines outlined in the respective RRB calendar.
External researchers may not begin any research activities or obtain data for research purposes without first following the procedures outlined in this policy and securing the necessary approvals.

We expect all researchers to be familiar with the guidelines and policies guiding research within the district. Please verify that you have read and acknowledged the following:

External Research Study and Data Policy
✔ I have read and understood the External Research Study and Data Policy

CPS RRB Guidelines
✔ I have read and understood the CPS RRB Guidelines

CPS Equity Framework
✔ I have read and understood the CPS Equity Framework

CPS Vision
✔ I have read and understood the CPS Vision

CPS Volunteer Policy
✔ I have read and understood the CPS Volunteer Policy, including background check requirements

Study Personnel Details

Study Title

A Study of the MSI Science Leadership Initiative

Does your organization participate in a Research Practice Partnership (RPP) with Chicago Public Schools?

No

Primary Study Organization/University

Museum of Science and Industry

Current Study Contacts

Name	Role
Applebaum, Lauren Ph.D.	Primary Contact
Applebaum, Lauren Ph.D.	Principal Investigator
Felts, Nicholas PhD	Project Team Member
Mast, Fran M.Ed. Science Education	Primary Contact
Price, Aaron	Coordinator

Is the Principal Investigator a Student?

No

Is the researcher a CPS Staff Member?

No

Funding and Intervention Information

Is this project contracted by the CPS Board of Education?

No

Is a funding source associated with the proposed research?

No

Select the option that applies to your study

My study will involve a selection of individual schools

Please select all potential school sites involved with this study

Alfred Nobel Elementary School
CICS - Bucktown
Edward Coles Elementary Language Academy
Edward Everett Elementary School
John H Hamline Elementary School
Joseph Warren Elementary School
Ole A Thorp Elementary Scholastic Academy
Ronald E McNair Elementary School
William T Sherman Elementary School

Will this research require any in-person interaction or intervention activities?

Yes

Will this research require any virtual interaction or intervention activities (Google Meets, Zoom, etc.)?

No

Please note that Zoom is not approved for use with CPS Students. Any virtual activities will need to be conducted via Google Meets and safe@cps.edu must be invited to Google Meet. Please adjust virtual methods accordingly. For more information on permitted interactions with students and staff, please visit https://www.cps.edu/about/policies/acceptable-use-policy/external-volunteers/.

Please check all of the following that apply to your research protocol:

Observations
Questionnaire

Please outline your protocol for survey activities, describing when, where, duration, frequency, and with whom.

Research Procedures Overview
The first survey was sent at the beginning of fall 2021 to provide baseline information about the participating schools' current perceptions and implementation of science education. After opting in to the research study, a recruitment e-mail was sent to each school's teacher leader who is participating in the Science Leadership Initiative School Partners Program and a supporting administration. This email contained a link to an online survey that was forwarded to all instructional staff. Identical surveys will also be sent at the end of each program year (3 additional times) to measure change over time.

Study Timeline:
Survey 1: Fall 2021 – Beginning of Program Year 1
Survey 2: Spring/Summer 2022 – End of Program Year 1
Survey 3: Spring/Summer 2023 – End of Program Year 2
Survey 4: Spring/Summer 2024 – End of Program Year 3

Survey Recruitment
All schools enrolled in their first year of the SLI School Partners Program beginning in fall 2021 were invited to participate. With each subsequent survey, instructional and administrative staff will be contacted to be a part of the study through the administrator that is participating in the SLI School Partners Program. The PI or another member of the study personnel contacted administrators in person during an SLI work session at the Museum and/or reached out to them via email (See attached example opt-in email template). Administrators that agreed to participate will be provided with an email template and a survey link to send out to their internal listserv of administrative and instructional staff. See the attached sample recruitment e-mail is written from the voice of MSI staff (as recommended to us in a reply to our prior RRB submission in 2019).
To further encourage participation in the End of Year Survey, at the end of Year 2 we began offering pizza to all staff at the participating schools. Schools were contacted by MSI professional learning staff and MSI offered to visit their school with pizza and surveys. (See SLI 2023_Pizza recruitment email and sign-up genius). For those schools who opted-in, survey participation was not a condition of enjoying the pizza. Additionally, to make participation as easy as possible, we also provided tablets with the survey preloaded, QR codes for scanning on personal devices, and paper copies of the survey.

Survey Consent
The first page of the online survey will contain a consent document and a 'Yes/No' click box indicating whether or not they agree to participate in the study. Participants will not be able to continue to the rest of the survey unless they select 'Yes.' If respondents complete the survey multiple times throughout the study, they will go through the consenting process each time they fill it out. See the attached survey consent form.

Survey Data Collection & Incentives
Each online and paper survey should take approximately 10-15 minutes to complete. Each individual that completes a survey will be mailed an entry voucher to the Museum for 4 people. They will receive this entry voucher each time they complete a survey throughout the course of the study. Respondents will be sent voucher-related information to a personal email address of their choosing. Additionally, at each of the 4 data collection points, a raffle will be done within each school in which 1 respondent will be randomly selected to receive a $50 Amazon gift card. Also, any school that has strong participation (approximately a third or more of instructional staff) will be given $250 paid directly to the school itself. Note that this latter incentive is to be directed and paid out at the school-level and not to an individual staff member, as is the case with other the incentives noted above. The cohort of schools we intend to follow for the

study period has been established, and school sizes (and thus the number of instructional staff) are variable. Using the amassed totals of instructional staff per school, research personnel will be able to determine a good faith effort on the part of schools to reach the above outlined threshold. This avoids stating a specific number that may not be feasible for a given school and avoids using a high percentage of participation that may cause undue peer pressure for potential participants.

Please describe how data will be captured and stored securely
Each time the survey is sent out, it will be sent out to the entire listserv of staff associated with instruction and education (re: not just to the individuals who took the first survey in fall 2021). However, our hope is that individuals take the surveys more than once, and in such cases, it would be advantageous from a statistical standpoint to be able to link their responses. Furthermore, it will be essential to know which school individuals are coming from, so that we can analyze their responses as an aggregate within their school site in order to measure institutional change over time. Therefore, we will be collecting the following identifying information (Note: some of this information is not identifying on its own, but could potentially be identifying in conjunction with other pieces of data collected in the survey – such as knowing the school where someone works and also the courses/grades they teach).

-Name of school – Used for both analysis and to link responses over time

-First and last name – Used to link responses over time and for mailing out Museum entry vouchers as an incentive

-Email address – Optional, used only to send Museum entry vouchers (All respondents will first be provided with the option to have vouchers sent to their school email , with the option to provide an alternative address if they choose)

Personally identifiable information will be replaced with unique and anonymous identifiers during the processing of collected data. A crosswalk document will be kept to link identities and the UIDs until the final survey is collected. Once that final survey is collected and processed, the crosswalk document will be destroyed.

All data will be stored digitally in two secure locations: (1) a password-protected QuestionPro account (an online survey software program that will be utilized to collect the data) accessible only by the Museum's Research and Evaluation department, and (2) on the Museum's secure network drive, only regularly accessible by members of the Research and Evaluation department, and in extremely rare cases, by Museum IT staff. No hard copies of data will be collected or stored. After data collection (i.e. after Year 3 of the program) and data analysis has been completed, first and last names of respondents will be removed from the data sets. These de-identified digital data will be kept on the Museum's network drive indefinitely.

Reporting: All identifiers (e.g. names of schools, names of individuals, and employment titles) will be removed before data is shared or reported outside of the MSI Research and Evaluation department. This includes all preliminary reports, final reports, and/or data sets shared with other Museum staff (such as SLI program staff) or SLI program participants.

Please attach all study materials corresponding to interview procedures (i.e., consent forms, protocol, recruitment and incentive plans)

SLI 2021_Survey Consent Form_V5.docx	Consent Forms
SLI 2021_Recruitment Email Template_V5.docx	Recruitment Materials
SLI 2023_Pizza recuitment email and sign-up genius.docx	Recruitment Materials
SLI 2021_Whole School Survey_V3 (1).docx	Surveys

Detail the method of Survey Administration (e.g. paper, online, etc.)

After the administrator agrees to have their school participate in the research study, study personnel will email teacher leaders and supporting administrators an recruitment email template. All administrative and instructional staff will be forwarded the recruitment template. A link to an online survey will be added to the recruitment template (see the attached template as an example). The first page of the survey will contain the consent form with key information and a 'Yes/No' click box indicating whether or not they agree to participate in the study. Participants will not be able to continue to the rest of the survey unless they select 'Yes.' The survey will take 10-15 minutes to complete.

Please outline your protocol for observation activities, describing when, where, duration, frequency, and with whom.

As part of the SLI School Partners Program, school cross-disciplinary teams consisting of teachers from across different subjects and grade bands and administrators meet periodically throughout the school year. Occasionally MSI staff attend these meetings to help facilitation and/or provide guidance to issues they are working on. In 2021-2022 it is expected that the teams will be virtually (usually via Zoom or Google Meets) but it is possible some may meet in-person or take a hybrid approach.

Starting in the 2021-22 school year, a member of the research personnel will attend some of those meetings to take notes that may reflect progress or shed light on challenges the teams are facing. The researcher would be a passive participant. Sometimes they may be the only MSI staff there and sometimes they will be there along with the regularly scheduling SLI staff member, who would then serve in their normal role.

Observations Timeline and Sampling

Year 1 (School Year 2021-2022): 2-3 observations of interdisciplinary team meetings per school throughout the school year
Year 2 (School Year 2022-2023): 2-3 observations of interdisciplinary team meetings per school throughout the school year
Year 3 (School Year 2023-2024): 2-3 observations of interdisciplinary team meetings per school throughout the school year

Research Procedures
The researcher will take notes using an observation rubric attached to this application. Most of the notes will be in the form of counting the number of times a specific subject is brought up or action occurred. But direct quotations, without any attribution, may also be recorded in the rubric. No audio or video will be recorded in these sessions. The only record will be via the observation rubric. In addition to the observation rubric, the researcher will complete a short series of debrief questions following the observation. Debrief questions will illuminate emergent trends, document which phase of work the interdisciplinary team completed during the meeting, and reflect on meeting conversation and content.

Our goal, for each school, is to observe two sessions in fall 2021, one session in winter 2022 and one session in spring 2023. However, it is possible that we will do fewer based on available staffing time.

Does this involve video, audio, or photograph recording?
No

Please note: Video/Audio classroom observations where students are present is not permitted unless every student present for the observation has active assent and parental consent.

Please describe how data will be captured and stored securely
Printed observation rubrics with tallies and notes made by the observer will be entered into an Excel database and then the paper copies will be destroyed. The database will be kept on the Museum's secure network drive, only regularly accessible by members of the Research and Evaluation department, and in extremely rare cases, by Museum IT staff. These digital data will be kept on the Museum's network drive indefinitely.

How will you protect individuals who did not consent to participate in the observation, and what will non-consented students be doing during the observation(s)?
At the start of each meeting a verbal consent script will be read (see attached script).

Anyone who does not want to be included in the rubric will be given the option to opt out. In those cases, their participation will not be included in the rubric (no quotes will be taken and they will not be included in any counts). The total number of people in a session who opt out of being included will be noted, so the researchers can consider that in their later analysis. But the identities of the specific people who opt out will not be recorded. If the meeting is virtual, the observer will instruct anyone wanting to opt-out to send them a private message via the chat feature. If the meeting is in person, then blank note cards will be handed to all attendees. Everyone will be asked to write their name on the note card. If anyone wants to opt out, they will be asked to indicate that that as well. Then all note cards will be passed to the observer. Participants will have nametags on the tables in front of them, so the observer can use that to know who to leave out of the notes. Observations will only be made of the cross-disciplinary school team members who consent, no additional staff or students will be observed.

Please attach all study materials corresponding to observation procedures (i.e., consent forms, protocol, recruitment and incentive plans)

SLI 2021 - IRB - Verbal Consent Script - v2 (1).docx	Consent Forms
SLI 2021 - IRB - Observation Rubric_V2.docx	Observation Protocol

Will this research require the use or access of existing CPS data?

No

Will this research require the use or access of existing non-CPS data?

No

Study Details

Please select all of the following that will be participating in the study?

Teachers
Other Staff

Has this project been reviewed by an Institutional Review Board (IRB)?

Yes, and it was approved

IRB of Record Name
MSI-IRB

IRB Protocol Number
MSI-IRB19_07_MOD08

Please attach all of your IRB documentation here (include approval/exemptions letters, IRB study protocol, etc.).

MSI-IRB19-07_MOD08 Amendment Approval Final 6.5.2024.pdf	IRB Letters
MSI-IRB19_07_MOD08_Protocol Participant Facing Documents.docx	IRB Protocol

Deleted Attachments: 4 (Most Recent: MSI IRB_Non Compliance Report Form_MSI-IRB19_07 v3.docx on 06/06/2024 3:34 PM ET)

IRB of Record Primary Contact Email Address
irb@msichicago.org

Please select your primary area of research from the following:

STEM Education

Secondary Study Subject(s)

School Structure/Functions

Study Overview

Executive Summary or Abstract

Please provide a high-level overview of your study, including a summary of the motivation, design, and implications of the project.

The Museum of Science and Industry, Chicago has a program called the Science Leadership Initiative. Each year, about 15 schools join the 3-year program. During that time, MSI trains teacher leaders to support the science at the whole school level. That is, to enhance science learning across the school (not just in science classes). This study is a proposal to learn more about the program's impact at the whole school level as each year progresses. We request to send surveys to all teachers and educational staff at a school. We also request to observe and take notes at some team meetings that happen at the school (or virtually). These meetings involve a cross disciplinary team of teachers and administrators across the school and are facilitated by a teacher leader trained by MSI as part of this program. We propose to do this for each of the 3 years the school is in the program for the cohort of schools entering into the program during the 2021-22 school year.

Research Questions and Hypothesis

Please list all research questions and hypotheses associated with this project.

In past internal evaluations of the SLI School Partners Program, program participants rated their experiences and the impact of SLI on their institution extremely highly. However, we have no data on whether or not this impact is observable at institutions beyond SLI’s direct participants. This research study aims to measure evidence of impact through the inclusion of a wide variety of administrators and instructional staff at SLI school partners, not just the individuals who have direct interaction with SLI programming.

Research Question: What is the whole-school impact on science education as a result of participating in the SLI School Partners Program?

Purpose and Literature Review

Please provide an overview of the existing research and literature on this subject. What is the contextual history of this subject area and how does this research build upon the body of extant knowledge?

Background

The Museum of Science and Industry's Science Leadership Initiative (SLI) addresses the critical issue of student achievement and exposure to STEM by supporting science education on a whole-school level. Its School Partners Program guides schools through a process of gauging their current status in science education, creating an action plan, and implementing that action plan over the course of 3 years. MSI supports its school partners (which include a teacher leader, administrator, and cross-disciplinary team of multiple grade levels from each school) to elevate science programming at the whole-school level. In past internal evaluations of the SLI School Partners Program, program participants rated their experiences and the impact of SLI on their institution extremely highly. However, we have no data on whether or not this impact is observable at institutions beyond SLI's direct participants. This research study aims to measure evidence of impact through the inclusion of a wide variety of administrators and instructional staff at SLI school partners, not just the individuals who have direct interaction with SLI programming. A similar study to this was started, with IRB and CPS RRB approval, in the fall of 2019. However, it was canceled in spring 2020 as a result of the pandemic. This proposal describes a similar project, with a few modifications based on our limited experience from that first attempt.

Literature Review

The purpose of this study is to measure whole-school change in the prioritization and implementation of science education as a result of participating in the Science Leadership Initiative (SLI) School Partners Program at the Museum of Science and Industry, Chicago. In past internal evaluations of this program, participants rated their experiences and the impact of SLI on their institution highly. However, the SLI School Partners Program is designed to address the critical issue of student achievement and exposure to STEM by supporting science education on a whole-school level, and we have no data to confirm the extent of this impact at SLI school partners beyond the program's direct participants. Incorporating the perspectives of instructional staff and administrators that do not have direct interactions with SLI staff would provide a more accurate snapshot of how the tenets of the program are being disseminated and implemented throughout the entire institution.

The SLI School Partners Program is founded on the idea that the creation of a whole-school culture supporting science education is important for the initiation of whole-school science education reform (Chiu, Price, & Ovrahim, 2015). Although based in a museum rather than a school, SLI and other programs within the informal education sector play a critical component in the overall ecosystem of STEM education (NRC, 2009). Its model of guiding schools through the process of gauging their current status in science education, creating an action plan with clearly defined goals and steps, and implementing that action plan is based upon model pathways for successful STEM integration (Bybee, 2013). Furthermore, its focus on not just science teachers, but administrators and cross-disciplinary teachers as well, is similarly based on best practices in the field of STEM education. The National Research Council states that "Effective instruction actively engages students in science, mathematics, and engineering practices throughout their school" (2011, p. 18). Additionally, evidence suggests that school leaders – and in particular, principals – improve teaching and learning through their influence on staff commitment, motivation, and work environment (Leithwood, Harris, & Hopkins, 2008).

The design for this study is based on Coburn's (2003) framework for assessing the concept of scale in school reform. Scale is comprised of four interrelated dimensions:

depth, sustainability, spread, and shift in reform ownership.

- Depth: Changes in norms of social interaction, such as the way teachers and students talk to each other about science and/or science education • Sustainability: A supportive professional community of colleagues at a school that reinforce normative changes, knowledgeable and supportive school leadership, and connections with other schools or teachers engaged in similar reform
- Spread: When the reform spreads to a greater number of classrooms, often beyond areas of the classroom, times of day, or activities devoted to the targeted subject
- Shift in reform ownership: When authority and knowledge of the reform is shifted to teachers and schools The survey instrument for this study incorporates these dimensions to provide a more thorough understanding of the degree to which SLI creates whole-school reform around science education.

References

Byebee, R.W. (2013). The Case for STEM Education: Challenges and Opportunities. NSTA Press.

Chiu, A., Price, C.A., & Ovrahim, E. (2015). Supporting Elementary and Middle School STEM Education at the Whole-School Level: A Review of the Literature. Paper presented at NARST 2015 Annual Conference, Chicago, IL.

Coburn, C.E. (2003). Rethinking Scale: Moving Beyond Numbers to Deep and Lasting Change. Educational Researcher, 32(6), 3-12.

Leithwood, K., Harris, A., & Hopkins, D. (2008). Seven strong claims about successful school leadership. School Leadership and Management: Formerly School Organisation, 28(1), 27-42.

National Research Council (2009). Learning Science in Informal Environments: People, Places, and Pursuits. Committee on Learning Science in Informal Environments. Phillip Bell, Bruce Lewenstein, Andrew W. Shouse, and Michael A. Feder, Editors. Board on Science Education, Center for Education. Division of Behavioral and Social Sciences and Education. Washington, DC: The National Academies Press.

National Research Council (2011). Successful K-12 STEM Education: Identifying Effective Approaches in Science, Technology, Engineering, and Mathematics. Washington, DC: The National Academies Press.

Research Activities and Student/Staff Involvement

Please provide an overview of all primary and secondary research activities associated with this study. Please use this space to describe, as thoroughly as possible, all that will be asked of your research subjects (e.g. surveys, focus groups, observations, etc.)

There are two main measurements: surveys and observation rubrics:

1. Surveys

All schools currently enrolled in their first year of the SLI School Partners Program beginning in fall 2021 will be invited to participate. Instructional and administrative staff will be contacted to be a part of the study through the administrator that is participating in the SLI School Partners Program. The PI or another member of the study personnel will contact administrators in person during an SLI work session at the Museum and/or reach out to them via email. Administrators that agree to participate will be provided with an email template and a survey link to send out to their internal listserv of administrative and instructional staff. Each time the survey is sent out, it will be sent out to the entire listserv of staff associated with instruction and education. MSI staff will also contact administrators/lead teachers to offer an in-person survey data collection option. During in-person data collection, MSI research staff will provide tablets, QR codes, and paper copies of the survey along with pizza. Staff may enjoy pizza regardless of their participation in the survey. Surveys will take approximately 10-15 to complete.

2. Observation Rubric

As part of the SLI program, school cross-disciplinary teams meet periodically throughout the school year. Occasionally MSI staff attend these meetings to help facilitation and/or provide guidance to issues they are working on. In 2021-2022 it is expected that the teams will be virtually (usually via Zoom or Google Meet) but it is possible some may meet in-person or take a hybrid approach. During the research study, a member of the research personnel will attend some of those meetings to take notes that may reflect progress or shed light on challenges the teams are facing. The researcher would be a passive participant.

Research Methodology and Analytical Technique

Please provide an overview of your research methodology and specific analytical techniques that will be utilized as part of this study.

The object of this study is to measure whole-school change in the prioritization and implementation of science education as a result of participating in the SLI School Partners Program. Quantitative measures include a survey about changes in science instructional minutes, planning time dedicated to science education efforts, staff perceptions of science education at their school, and the types of science initiatives that are being implemented. The survey data will be collected at the beginning of Year 1 of the SLI School Partners Program (Fall of 2021) with schools entering into the program in the 2021-22 school year. Surveys will be repeated at the end of each school year for the three-year duration of the program. Qualitative measures include an observation rubric that will be filled out by researchers passively observing group meetings of each school's cross-disciplinary team. As a measure of change across time, analysis is likely to include independent and paired samples (should a robust enough sample of linked surveys be garnered) comparisons of means and distributions across each of the four survey data sets. Given the bespoke nature of actions plans developed as part of the SLI School Partners Program, exploratory analysis across time within schools may may also be conducted. Exploration of associations and relationships amongst quantitative survey items may also take place to further illuminate trends and patterns in change across time. Analysis of observational data will likely include frequency counts and narrative summaries that will be used to illuminate findings and trends of the quantitative survey measures.

Benefits and Commitment to Equity

Benefit to CPS

Which (if any) CPS vision goals does your research support?
No answer provided.

Click here to access more information on the CPS Vision Goals.

Which (if any) of the CPS core values does your research support?
Community Partnership

Please describe how your project supports each of the core values selected above.
Our project is about studying a 3-year collaboration between the Museum of Science and Industry and local CPS schools at the whole-school level.

How does this project support the district broadly?
This study has the potential to provide a deeper understanding of how the Science Leadership Initiative (SLI) School Partners Program creates whole-school change in the prioritization and implementation of science education, and specifically in what areas. This understanding will help to inform future planning and refinement of the SLI model, which ultimately leads to an increase in the quality and frequency of science education for students at these schools. The SLI model actively recruits schools from the Chicago Public Schools system (for example, in our 2019 cohort 11 of the 13 schools were from CPS), and a refinement of the program model will improve science education knowledge for CPS teachers and students alike. Furthermore, schools and organization outside of the SLI program may benefit from the dissemination of these results and be motivated to adopt aspects of the SLI program in their own institutions.

Nationwide, there is very little research on whole school STEM supports. In fact, we could find no longitudinal, empirical studies of the impact of a whole school STEM intervention program like this. However, stakeholders are very interested in the topic. White papers we have published on the topic are among the Museum's most highly cited literature. And we recently received a grant from the National Science Foundation to hold a 2-day conference to discuss the role of equity in whole school STEM reform models (held in the spring of 2022 at MSI).

Commitment to Equity

In what ways does this project reflect/challenge/progress the district's commitment to equity?

Reflect on the district's equity framework as well as the following: As a researcher, what is my privilege / bias when it comes to this question? Am I assuming that Black and brown students will inherently perform poorly? Have I consulted those whose communities I want to research? Is the research designed with the holistic humanity of the people I am researching in mind? Do I perceive the communities I want to research as allies, or as research subjects? Am I interrogating / challenging policies and systems that may be contributing to inequities? Will this project create an undue burden on the communities I am seeking to research?

The Museum of Science and Industry is a privileged institution with a long history of ties with CPS. Our relationships with the schools in this study go back many years and involve the whole school - not just individual teachers. As researchers, we do have additional privileges associated with our employment and educational history (plus individual privileges based on race/gender, for example the former PI is a White, Male with a middle-class background). We recognize this and introduce positionality in all of our reports.

As a side project (not part of this research study), we ran a virtual conference this spring to discuss how to bring equity into the whole school STEM reform model. Kelli Easterly, Executive Director of STEM at CPS, was one of our speakers. We hope to use this conference to elevate equity in our SLI model. While not officially part of our research, we offer that as an example of our commitment to equity.

The SLI School Partners Program is not a one size fits all model of whole-school science education reform. Those most familiar with a school's context-teachers and administrators - are responsible and accountable for developing plans and enacting changes to improve science education at their schools. These individuals are centered as the most critical assets for improving science education practices for students. This study, in part, will uncover successes and barriers faced by schools teams in enacting this kind of grassroots whole school science education reform. Likewise, the study will surface opportunities for additional support that can be offered by programs like the SLI School Partners Program. Implications for practice resulting from study finds can aid school teams and education leaders in making impactful change at the whole-school level. This study provides an opportunity to take an inward look at the SLI School Partners Program. Through observations of schools teams and tracking of changes in science education at the whole-school level, we will begin to the extent to which the SLI model supports school teams in reflecting on equitable

practices within their school and developing plans that attend to systems of power, privilege and difference.

Prior years of program development and evaluation studies provided an opportunity to pilot methods and procedures with stakeholders impacted by this study. Working alongside SLI program developers, teachers, and administrators, we developed and tested measures to be salient to school communities. Soliciting feedback about our processes ensured that study procedures are reasonable and won't detract from the many primary responsibilities of educators. We will continue to be responsive to the needs of educators, adjusting procedures and measures as needed, throughout the course of the study.

How are your research activities accessible to individuals with disabilities?
Our online survey platform, Question Pro, certifies that surveys are accessible to all including any users who have a visual, hearing, motor or cognitive impairment. This includes being screen reader capable, having multiple modalities to advance through the survey, and providing visual themes that are 508-compilant.

Given that observations of school team meetings will be passive in nature, interactions with research personnel and instrumentation will be limited. However, recruitment scripts are presented verbally and can presented in-writing on an as-needed basis. Likewise, opt-out procedures are inherently flexible as noted in the observation verbal consent script and can be done verbally, in written form, via direct message, etc.

Are your research activities translated into languages other than English as appropriate for the community?
All research activities and materials are currently only in English.

Please use the table below to list all District CPS Supporters and the role they will have in your study. Use the details box to describe your supporters' title and role in the district. List your primary supporter first.

Please click "save" after each line.

CPS Supporter Email Address	CPS Supporter Details

Link to New Contact Form
User had the option to start a different form here.

How will you share your research findings with the population(s) you are studying?
Upon completion of the research study (summer 2024), the research will send a letter to the RRB notifying the committee of the completion of the study. A copy of the final report will be sent to the RRB as well as the administrators participating within the Museum's Science Leadership Initiative program, which they will be free to share with staff at their schools. We will also include a short, 2-page Executive Summary, which will be written to be accessible to non-researchers and can be shared with anyone at the involves schools. Finally, we will offer to present results privately to staff at each school upon request.

Research Activities

Start Date of Recruitment

09/01/2021

End Date of Recruitment
05/10/2024

Please provide the date that you will begin primary data collection

09/15/2021

Please provide the end date of primary data collection
05/31/2024

Please provide the date that you will begin analysis

10/15/2021

Please provide the end date of analysis
06/28/2024

Please provide the approximate date that you will finalize your research report.

07/31/2024

Description of Deliverable/Final Product (i.e., academic/journal article, white paper, memo, report)

We intended to develop the following outputs tailored to specific audiences:
-Stakeholder Reports & Presentations: This will be a series of internal reports and/or presentations tailored to internal program personnel and key external stakeholders (e.g. supporting administrators). Reports will likely focus on progress to date and present actionable results and implications for program advancement.
-Academic Publications and Presentations: We plan to present results at national conferences (e.g. American Educational Research Association) and prepare manuscripts for publication with emphasis on tracking the extent of change over time and implications for whole-school science and STEM reform models.

Will any portion of this research, including recruitment or consent, take place during or in any way interfere with standard activities?

No

With very few exceptions, research procedures cannot be carried out during or in any way interfere with standard activities, including instruction time or professional development sessions.

Will this study involve study subject randomization or a control group?

No

Will your research employ study-subject deception or non-disclosure?

No

Will this research involve Product Testing?

No

Will this research involve collection of biological samples or biometric data?

No

Does this research involve other research procedures not described previously?

No

Is this research tied to a standard or novel curriculum, teaching or other program, staff professional development training or program, or other non-research activity or activities?

No

Does this study involve the use of educational technology (including survey tools, video conference platforms, and third party websites. See note for add'l details)?

Yes

Please be aware that under The Student Online Personal Protection Act, SOPPA (105 ILCS 85/), any platform students interact with must be compliant with current data security and student privacy regulations. Please note that this definition includes online survey tools such as Qualtrics. Please use the following website to check if your proposed platform is complaint with SOPPA: https://cps.app.learnplatform.com/new/public/tools

Please describe the use of educational technology as part of this study
We use QuestionPro, a survey platform, to collect and store survey data.

Is the described educational technology a CPS SOPPA operator?
Unknown

Please use the following website to check if your proposed platform is complaint with SOPPA: https://cps.app.learnplatform.com/new/public/tools

Study Population

Will you be submitting a secondary Data Request?

No

Study Subject Inclusion Criteria

Participants will include administrative and instructional staff currently employed at schools entering the SLI School Partners Program in fall 2021 (see schools selected under the potential schools sites section of this application). The study will follow this cohort of schools for all three years they participate in the program. Note: instructional staff will include those who teach all subject areas, not just science.

If the research involves more than one study subject population (e.g. students, parents, teachers, staff), please individually detail the inclusion criteria for each.

Study Subject Exclusion Criteria

Staff who are not employed at SLI School Partner Program schools are not eligible to participate in the research study. Survey measures are intended for administrative and instructional staff (teachers, aides, paraprofessionals, etc.) and may not be salient for other school staff members.

If the research involves more than one study subject population, please individually detail the inclusion criteria for each

Please select all special populations that may be targeted for your study

No answer provided.

Describe the potential direct and/or indirect benefits for all detailed research procedures and populations

There are no direct benefit to participating in the study. However, given that there is very little scholarship surrounding whole school STEM supports, this study has the potential to advance the field of science education broadly. Specifically, participants and those in the broader science education community may benefit from research findings that lead to more a robust understanding of and programmatic support for whole-school science education models (e.g. improved professional development for teachers and school leaders).

Describe the anticipated potential risks, however minimal, associated with the detailed research procedures and subject populations

We expect there to be very little risk to be involved in this study. However, some participants may experience stress or discomfort at the prospect of being observed during school team meetings or answering survey questions about science practices at their school. The latter may be particularly true for those that teach non-science subjects, and therefore may have less familiarly, perceived agency, or responsibility over science education practices or prioritization at their schools. There is also the potential risk of a confidentiality breach if participant identifying information is released outside of the research team.

How will the identified risks for all research procedures and subject populations be minimized and/or mitigated to the greatest extent possible?

The potential for stress or discomfort will be mitigated in the following ways 1) Participants will be made aware that the is voluntary and participants can choose to stop taking the survey at anytime. Similarly all survey questions are optional and none are required to be answered with the exception of the survey opt-in on the consent page which must be completed to advance through to the survey. 2) Any member of the school team can opt out of observations or have observation of their participation stop at any point.

Potential breaches of confidentiality will be mitigated via the following 1) All survey data will be stored digitally in two secure locations- a password-protected Question Pro account (an online survey software program that will be utilized to collect the data) accessible only by the MSI Research and Evaluation department and IT staff or on the Museum's secure network drive, only regularly accessible by members of the Research and Evaluation department, and in extremely rare cases, by Museum IT staff. Observation rubrics will be entered into a database and then destroyed. 2) Personally identifiable information will be replaced with unique and anonymous identifiers during the processing of collected data. A crosswalk document will be kept to link identities and the UIDs until the final survey is collected. Once that final survey is collected and processed, the crosswalk document will be destroyed.

What procedures will you use in the event that research questions/processes produce observable stress/distress in subjects?

Research personnel will not be present when staff complete surveys and when those measures are completed is at the discretion of individual participants. Thus stress due to survey procedures or questions will not be observable, but as noted above, participants will be made aware the survey is voluntary and can be stopped at anytime. Should observations of school team meetings produce observable stress in participants, observations will be immediately ceased.

Will you compensate study subjects?

Yes

Detail the proposed compensation (monetary and/or non-monetary) for each research procedure and population

Each individual that completes a survey will be emailed an entry voucher to the Museum for 4 people. They will receive this entry voucher each time they complete a survey throughout the course of the study. Additionally, at each of the 4 data collection points, a raffle will be done within each school in which 1 respondent will be randomly selected to receive a $50 Amazon gift card. Also, any school with strong participation (approximately a third or more of all full-time instructional staff participating) will be given $250 paid directly to the school. Using the amassed totals of instructional staff per school, research personnel will be able to determine a good faith effort on the part of schools to reach the above outlined threshold. This avoids stating a specific number that may not be feasible for a given school and avoids using a high percentage of participation that may cause undue peer pressure for potential participants. Note that this latter incentive is to be directed and paid out at the school-level and not to an individual staff member, as is the case with other the incentives noted above.

Student incentives must be appropriate, equitable, and reasonable in amount. All staff incentives are limited to $50 or less in a given year. Any amount in excess will require the secondary employment form to be completed by staff participants, or otherwise have the amount allocated to the school.

Describe when and where study subjects will be compensated and detail the mechanisms that will be in place to ensure study subject privacy when distributing compensation.

Incentives will be distributed after each survey data collection period. Ticket vouchers and raffle prize winners will be contacted directly via an email address of their choosing. School level incentives will be mailed to the school in a non-descript envelope with accompanying letter outlining the the incentive payment.

Describe the compensation schedule for participants that withdraw from the research or that are withdrawn from the research by the study team.

Because incentives will be distributed after each survey data collection period, participants can opt-in or out of participation for any given survey. Participants only need to make a good faith effort to complete survey questions and provide an email address of their choosing to receive incentives.

Study Recruitment

Outline every aspect of the recruitment process for teacher participants.

Recruitment
All schools currently enrolled in their first year of the SLI School Partners Program beginning in fall 2021 will be invited to participate. Instructional and administrative staff will be contacted to be a part of the study through the administrator that is participating in the SLI School Partners Program. The PI or another member of the study personnel will contact administrators in person during an SLI work session at the Museum and/or reach out to them via email (see Appendix 1 for email sample). Administrators that agree to participate will be provided with an email template and a survey link to send out to their internal listserv of administrative and instructional staff. Appendix 2 has a sample e-mail administrators can use to send to their staff, written from the voice of MSI (as recommended to us in a reply to our prior RRB submission in 2019). Lead teachers and/or administrators will also be given the option of MSI research staff conducting in-person data collection. If lead teachers/administrators agree, MSI research staff will bring pizza along with tablets with surveys pre-loaded, QR codes to be scanned by personal devices, and paper copies of the survey. Staff may enjoy pizza regardless of their participation in the survey.

Outline every aspect of the recruitment process for non-teacher staff participants.

Recruitment
All schools currently enrolled in their first year of the SLI School Partners Program beginning in fall 2021 will be invited to participate. Instructional and administrative staff will be contacted to be a part of the study through the administrator that is participating in the SLI School Partners Program. The PI or another member of the study personnel will contact administrators in person during an SLI work session at the Museum and/or reach out to them via email (see Appendix 1 for email sample). Administrators that agree to participate will be provided with an email template and a survey link to send out to their internal listserv of administrative and instructional staff. Appendix 2 has a sample e-mail administrators can use to send to their staff, written from the voice of MSI (as recommended to us in a reply to our prior RRB submission in 2019). Lead teachers and/or administrators will also be given the option of MSI research staff conducting in-person data collection. If lead teachers/administrators agree, MSI research staff will bring pizza along with tablets with surveys pre-loaded, QR codes to be scanned by personal devices, and paper copies of the survey. Staff may enjoy pizza regardless of their participation in the survey.

Please attach all recruitment materials not attached elsewhere (Optional).

No answer provided.

Please attach all consent/assent forms associated with this study not already attached elsewhere (Optional).

No answer provided.

Identify study team members who will recruit subjects.

Recruitment was completed by Fran Mast, M.Ed. in the fall of 2021 and spring of 2022 for surveys 1 and 2 respectively. Recruitment was completed by Lauren Applebaum, Ph.D. in the spring of 2023.

Will this research involve screening procedures

No

Compliance

FERPA

For more information on FERPA, click here.

Is any aspect of this research subject to FERPA?
No

ISSRA

For more information on ISSRA, click here.

Is any aspect of this research subject to ISSRA?
No

PPRA

For more information on PPRA, click here.

Is any aspect of this research subject to PPRA?
No

Permission, Confidentiality, and Security

Attach a draft of the permission letter that will be sent to school Principals

No answer provided.

Please note that Principals have final authority over what happens in their schools.

How will you protect the privacy of prospective research subjects? Please detail how study subject privacy will be protected during recruitment, screening, consent, and all research procedures. Provide an accounting for all applicable research procedures and study populations.

Because supporting administrators and teacher leaders will forward survey recruitment communications to administrators and instructional staff at their schools, research personnel will not have access to contact information of potential participants prior to participants opt-ing to the study. Participants will have the opportunity to complete the survey on a device of their choosing (mobile phone, work or home computer, etc.) and during a time whenever they feel comfortable doing so. Additionally, survey responses will be sent directly to MSI (via QuestionPro) with no need for staff outside the research team to access survey responses or identifying information. While research personnel will know the names of individuals participating in school team meetings while observations are being made, names of individuals will not be recorded, nor will any identifying information or characteristics.
While in-person data collection increases the contact research staff has with participants, tablets and QR codes will minimize any direct handling of the data since participants will be able to submit their responses through QuestionPro. All paper copies will be handled by approved research personnel, all of whom have completed training in research ethics. Once paper copies are entered into QuestionPro by research staff, they will be destroyed, and the QuestionPro version will have the same security as described above.

Describe the data confidentiality or security provisions that will be in place for all research data.

All data will be stored digitally in two secure locations: (1) a password-protected Question Pro account (an online survey software program that will be utilized to collect the data) accessible only by the MSI Research and Evaluation department and IT staff, and (2) on the Museum's secure network drive, only regularly accessible by members of the Research and Evaluation department, and in extremely rare cases, by Museum IT staff. Observation rubrics will be entered into a database and the paper copies will then be destroyed.

How will you store participant data?

With codes

These details must be included in all applicable consent forms

Describe the coding mechanism, indicate where links to codes will be stored, identify the individuals who will have access to coding keys or links, and clarify if codes will be deleted at a later date.
Personally identifiable information will be replaced with unique and anonymous identifiers during the processing of collected data. A crosswalk document will be kept on an external flash drive in a secure locked cabinet at the Museum accessible only to research personnel. The crosswalk document will link the identities and the UIDs until the final survey is collected. Once that final survey is collected and processed, the crosswalk document will be destroyed. These de-identified digital data will be kept on the Museum's network drive indefinitely.

Will you keep participants' contact information on file after the data have been collected?

Yes

How long will you store participant contact information?
Until the final survey is collected in the spring of 2024.

Explain the purpose for which participant contact information will be retained, such as recruitment for future studies or other follow-up study completion

These details must be included in all applicable consent forms

Each time the survey is sent out, it will be sent out to the entire listserv of staff associated with instruction and education (re: not just to the individuals who took the first survey in fall 2021). However, our hope is that individuals take the surveys more than once, and in such cases, it would be advantageous from a statistical standpoint to be able to link their responses. Furthermore, it will be essential to know which school individuals are coming from, so that we can analyze their responses as an aggregate within their school site in order to measure institutional change over time. Finally, email contact information will be used to distribute incentives to participants.

Will you share individual-level data with other researchers or practitioners beyond the designated key research personnel?

No

What will you do with the data once the research has been completed (choose all that apply)?

Save data for future use or create a data bank

Please note that the district discourages storing study data for longer than three years after study completion.

Detail the purpose of the data bank or future use purposes, itemize the data points that will be included in the data bank, and explain if data will be banked with identifiers or codes. Also, explain possible timeline for data destruction.

Data will be stored with coded anonymous identifiers after the crosswalk document that links to the original identifying information is destroyed. Data will be retained should additional analysis beyond that outlined in the Research Methodology and Analytic Techniques section be required and to inform new research questions or studies.

All applicable consent forms must clearly detail all future use or data banking provisions and explicit consent must be sought and documented for all future use or data banking

Attachments

Please attach all miscellaneous attachments

RRB #1687 - Fran Mast - September 27, 2021.pdf	RRB Approval Letter	*If you are resubmitting your protocol following initial review, please attach your response letter here.*
MSI SLI Letter of Support from CPS HQ.pdf	Support Letters	

Are there any additional finalized contracts or agreements associated with this research that have not been attached elsewhere as part of this application (e.g. CPS Data Authorization Agreements)?

No

Are there any pending (i.e. not yet signed by both parties) contracts or agreements associated with this research that have not been attached elsewhere as part of this application?

No

Acknowledgements

Acknowledgements

Please acknowledge the following:

✔ All parts of this submission are accurate, complete, consistent, and clear.

✔ I have accurately and completely described all intended human subjects research procedures and the populations with whom they will be carried out.

✔ I have attached all study materials, including, but not limited to, all materials that will be given to, sent to, read to, or otherwise used with all prospective study subject populations.

✔ This submission adhere to all CPS policies and guidance as outlined in the link below

https://www.cps.edu/about/district-data/conduct-primary-research/

✔ I have accurately identified all personnel who will be involved in this study.

✔ I acknowledge that any/all changes required by the CPS RRB in the course of its review of this submission will be reported to my IRB of record during the entire lifetime of this study.

✔ I attest that I will work with my IRB of record to address any concerns raised in the review of this submission.

✔ I attest that all of the research procedures detailed in this submission have been carried out with prospective IRB review and approval.

✔ I agree to comply with all background check and volunteer procedures required of my study, per the official CPS Volunteer Policy (link provided below):

https://policy.cps.edu/download.aspx?ID=272

Submission Date

04/07/2022

All RRB new submissions, modifications, continuing reviews require a $50 processing fee. Please click on the following link to access our payment system. You will need to reference your assigned RRB number listed below:

CPS RRB/Data Request ePay System

Once you navigate to the Illinois E-Pay Site, please click on the blue text "RRB / Data Request Payment Option " to display the appropriate payment options. Once selected, your total will be displayed. Do not attempt to type in your total manually.

RRB #
2021-1687

Payment Confirmation Number
20000312

Load CR/Mod into IRBManager
- Submitted 06/28/2024 12:17 PM ET by System, The

CR/Mod Processing
- Submitted 07/12/2024 2:14 PM ET by Corson, Adam

CR/Mod Processing

Ready for Review

Approve

Approval Date

07/12/2024

Approval Period (in number of months)
12

Existing Background Check Level
Level I

Existing Background Check Justification
Possible in school interactions

Does background check level need to be updated?
No

Notes for Letter
No answer provided.

RRB Meeting Date for Notification

08/01/2024

Current School Sites

400025 - CICS - Bucktown
609862 - Edward Coles Elementary Language Academy
609909 - Edward Everett Elementary School
609964 - John H Hamline Elementary School
610098 - Alfred Nobel Elementary School
610172 - William T Sherman Elementary School
610201 - Ole A Thorp Elementary Scholastic Academy
610218 - Joseph Warren Elementary School
610282 - Ronald E McNair Elementary School

School Sites Chosen Within Data Entry

Alfred Nobel Elementary School
CICS - Bucktown
Edward Coles Elementary Language Academy
Edward Everett Elementary School
John H Hamline Elementary School
Joseph Warren Elementary School
Ole A Thorp Elementary Scholastic Academy
Ronald E McNair Elementary School
William T Sherman Elementary School

School Contacts for Sites Chosen

Adrianzen, Manuel
Email: MOAdrianzen@cps.edu **Phone:**

D Toledo, Efren
Email: edtoledo@cps.edu **Phone:**

John Olson, Erik
Email: ejolson@cps.edu **Phone:**

Leneice Whitfield, Benetrice
Email: blwhitfield@cps.edu **Phone:**

M Roberts, Regina
Email: RMRoberts@cps.edu **Phone:**

N Smith, Shontell
Email: SNSmith@cps.edu **Phone:**

O'connell, Sarah
Email: soconnell@distinctiveschools.org **Phone:**

Rojas, Rodolfo
Email: RMRojas@cps.edu **Phone:**

Wm Mcspadden, Charlie
Email: cwmcspadden@cps.edu **Phone:**

Are the Supplementary Sites the same?

False

Administrative Reviewer

Corson, Adam
Email: ACorson1@cps.edu **Phone:**

Load Approved Modifications
- Submitted 07/12/2024 2:15 PM ET by System, The

Determination Letter Finalization
- Submitted 07/12/2024 3:36 PM ET by Corson, Adam

Review Generated Letter and Confirm Before Sending

RRB #

2021-1687

Study Title
A Study of the MSI Science Leadership Initiative

Principal Investigator
Applebaum, Lauren Ph.D.
Email: lauren.applebaum@msichicago.org **Business:** (773) 753-2579

Determination Letter

In some cases you may see other determination letters attached by the submitter. However, only the generated determination letter will be sent in the decision email.

Name	Type	Date
RRB#2021-1687- Lauren Applebaum, Ph.D. 2024-07-12.docx	Determination Letter	07/12/2024

This determination letter will be automatically attached to an email being sent to the principal investigator.

Please use the link below, click on the Attachments link on the left side of the page if you need to upload an edited version of the above letter.
Modification/Continuing Review defined 06/28/2024

Output Background Check Level

N/A

Additional Attachments to Decision Email

No answer provided.

Notes for Determination Email

No answer provided.

Study Site Contact Background Check Expirations

Name	Role	Background Check Expiration
Applebaum, Lauren Ph.D.	Primary Contact	Missing
Applebaum, Lauren Ph.D.	Principal Investigator	Missing
Felts, Nicholas PhD	Project Team Member	Missing
Mast, Fran M.Ed. Science Education	Primary Contact	Missing
Mekala, Urvi	Project Team Member	Missing
Price, Aaron	Coordinator	Missing

Please use the text box above to indicate the background check level required or any other pertinent information.
Level I

Background Check Level Justification
Possible in school interactions

Other Notes in Letter
N/A

Please enter the date by which the coordinator should submit the Data Use Agreement. Automatic notifications will be sent out based upon this date.

08/01/2024

SURVEY CONSENT FORM PAGE

You are being asked to participate in a survey about science education at your school. It is for administrators at all levels and teachers of all subjects – not just science! This survey is part of a study about how the Science Leadership Initiative School Partners Program at the Museum of Science and Industry, Chicago creates whole-school change around science education.

KEY INFORMATION:

- Your participation involves the filling out of a survey, estimated to take 10-15 minutes. ~~Additional surveys will be sent out to your school once per year for the next 2 years that your school is part of the Science Leadership Initiative program. years.~~
- There are no additional direct benefits for participation.
- We do not anticipate any harm or risk in your participation.

- This is voluntary. You can choose not to participate. There is no penalty for doing so.
- You can choose to stop filling out any survey at any time, with no questions asked.
- **This survey asks you to provide your name and the name of your school. This information will allow us to link your responses over the course of the study. However, your identity will be kept confidential by the research team. Only the research team will have access to this information. All responses will be anonymized before they are shared with any other Museum staff or any staff at your school.**
- Everyone who completes a survey will receive a voucher good for a group of four to attend the Museum ($109-$136 value) and be entered into a drawing for **a $50 Amazon gift card**. Every school that has strong participation (approximately a third or more of all instructional staff participating) will have **$250 donated directly to the school.**

This research is being conducted by the Research and Evaluation department at the Museum of Science and Industry. The Director of that team is available to answer any additional questions you may have, now or later. ~~He~~ She may be contacted at:

~~Aaron Price, Ph.D.~~ Lauren Applebaum, Ph.D.
~~aaron.price@msichicago.org~~ Lauren.Applebaum@msichicago.org
Office Phone: (773) ~~947-3101~~ 753-2579

If you agree to participate in this study, please click "Yes" below and begin the survey.

- Yes, I agree to participate in this study.
- No, I do not agree to participate in this study.

SAMPLE EMAIL FOR ADMINISTRATORS TO SEND TO SCHOOL SAFF TO PARTICIPATE IN SURVEY

Hello,

Below is a request for staff at our school to participate in the ongoing study about the partnership with the Museum of Science and Industry. If you have questions, the researcher's contact info is included in the message below.

My name is ~~Fran Mast~~Lauren Applebaum, and I am ~~an evaluator~~the director of Research and Evaluation at the Museum of Science and Industry, Chicago (MSI). As you may know, several staff at your school ~~-~~are participating in the Science Leadership Initiative School Partners Program with MSI. This program works to improve student achievement and exposure to STEM by supporting science education on a whole-school level.

As a part of this program, you may recall that we invited your school to participate in a research study at the beginning of the academic year. We have again prepared a survey for all administrative and instructional staff about the way science education is approached at your school, and how it could potentially change over time as a result of participating in program.

This survey is for administrative staff at all levels, and teachers of all subjects – not just science! And we invite you to participate again even if you participated last ~~fall~~spring. Your continued participation will provide important feedback about how our program helps create whole-school change around science education over time.

Everyone who fills out a survey will be:

- Emailed **a free entry voucher to the Museum of Science and Industry for four people**
- Entered into a raffle **for a $50 Amazon gift card** from among all entries at that school.

Every school that has strong participation (approximately a third or more of all instructional staff participating) will **have $250 donated directly to the school.**

The link to the survey is here: https://apple2021.questionpro.com

The first page contains more information about how this information will be shared, but please note that **the identity of everyone who takes the survey will be kept confidential.** Our research team will not share them with any staff at your school or any other staff at the Museum.

Thank you in advance. For questions about the study, you may contact me here:

~~**Fran Mast. M.Ed.**~~ Lauren Applebaum, Ph.D.
Director, Research and Evaluation~~Evaluator~~
She/Her
~~Fran.mast~~lauren.applebaum@msichicago.org
773-753-~~7089~~ 2579
Museum of Science & Industry, Chicago
5700 S. DuSable Lake Shore Drive, Chicago, 60637

On-site Data Collection Request

Hello [administrator/teacher leader name]!

As we mentioned at the work session, we would love to bring pizza to your school this spring and ask instructional staff to fill out the SLI Longitudinal Study survey. **Staff do not need to take a survey in order to enjoy pizza! The survey is completely voluntary.**

Participation in the on-site data collection is also entirely voluntary. You do not need to sign-up for on-site data collection in order for your school to continue to be part of the SLI Study.

More details are included in this SIGNUP GENIUS link. Please sign up for a date for us to come with pizza! Please sign up by XXXXX.

Let me know if you have any questions.

Thank you!

Sign-Up Genius or Other Calendar Sign-Up Text

Thank you for your interest in having MSI visit your school! A member of the SLI team and a member of the Research and Evaluation department would like to come to your school to encourage participation in the SLI survey. We will bring pizza for all instructional staff, and we will have QR codes, tablets, and paper copies of our annual survey for the instructional staff to take the survey. **Staff do not need to take a survey in order to enjoy pizza! The survey is completely voluntary.**

Participation in the on-site data collection is also entirely voluntary. You do not need to sign-up for on-site data collection in order for your school to continue to be part of the SLI Study.

If you are interested in on-site data collection, please select a date below for MSI staff to visit your school.

2021-2022 SLI WHOLE SCHOOL INSTRUCTIONAL STAFF & ADMINISTRATOR SURVEY

This survey will be distributed to all teachers at the school starting the 2nd week of each school's academic year. A version of the survey ~~without the demographic~~ information will be distributed to all teachers (incl. those who did not participate in the first survey) about one month before the end of that school's academic year. It is expected that a revised version of the survey will be distributed to all teachers at all schools at the end of the 2022-2023 and 2023-2024 school years. Any revisions will be submitted to the IRB as an amendment.

Demographics

- What is the name of your school?
  - Ascension School
  - ~~Catherine Cook School~~
  - ~~CICS Bucktown~~
  - Coles
  - Everett STEM Academy
  - Hamlin Upper Grade Center
  - Hameline Elementary School
  - Holy Family Catholic Academy
  - Rosa G. Maddock
  - McNair School
  - Alfred Nobel Daul Language School
  - St. John the Baptist
  - OA Throp Scholastic Academy
  - Joseph Warren Elementary School
- How many years have you worked at this school?
- How many years have you worked in education?
- What is your highest level of completed formal education?
  - Less than high school degree
  - High school degree or equivalent (e.g., GED)
  - Associates degree (2-year or equivalent)
  - Bachelors degree (4-year or equivalent)
  - Master's degree or equivalent
  - M.D./J.D./PhD or equivalent
  - Other – Specify:_____
- What best describes your role?
  - Departmentalized Teacher
  - Self-contained Teacher
  - Administrator
  - Other – Specify:_____
- What do you teach?
  - Science subjects, non-science subjects, both and non-science subjects, n/a or did not respond
- What grade levels do you teach (if teacher) (Check all that apply)
  - PK, K, 1, 2, 3, 4, 5, 6, 7, 8
- What is your gender?
- How would you classify the socioeconomic status (SES) of the community your school serves?
  - Lower SES, lower-middle SES, middle SES, upper-middle SES, upper SES
- Are you currently part of the cross-disciplinary team that meets as part of the MSI Science Leadership Initiative program?
  - Yes
  - No

Science Education Culture

- Please rate the following items based on the degree to which you agree. (5-pt scale from 'Strongly Disagree' to 'Strongly Agree')
  - At my school, science education is a priority.
  - I regularly use student-centered instructional practices in my classroom.
  - My students engage in hands-on learning on a regular basis.
  - I feel comfortable incorporating technology into my classroom lessons.
  - Students at my school have access and opportunity to participate in science education.

- At my school, science education is a lower priority.
- I play a role in science and/or STEM education at my school.
- There is another staff person at my school I can go to for support in science education.
- Staff at my school view me as a resource for science education.

- How often do students do each of the following in your class(es)? (5-pt scale from 'Never' to 'Daily or Almost Daily')
  - Apply science concepts to explain natural events or real-world situations
  - Ask questions and define problems
  - Develop and use models
  - Plan and carry out investigations
  - Analyze and interpret data
  - Use mathematics and computational thinking
  - Construct explanations and design solutions
  - Engage in argument from evidence
  - Obtain, evaluate, and communicate information

- Please rate the following questions using the scale below (3-pt scale from 'Not Present at All' to 'Very Present')
  - How strong was the presence of science at your school 1 year ago?
  - How strong is the presence of science at your school currently?
  - How strong do you think the presence of science will be at your school 1 year from now?

Teacher Attitudes towards Science Education

- Please rate the following items based on the degree to which you agree or disagree with each statement (5-pt scale from 'Strongly Disagree' to 'Strongly Agree').
  - The inclusion of every student in science programming is a priority.
  - Teachers share and collaborate openly, without judgment or negative repercussions.
  - Students and families are strategically integrated into school collaboration and planning.
  - Science is promoted as a body of deep conceptual knowledge that is central to our world.
  - Decision-making for science programming is done through team collaboration.
  - Collaborative structures enable sustained implementation of science programming.
  - Sufficient time for science learning is provided in every grade and for every student.
  - Science curriculum and instructional materials are aligned with Next Generation Science Standards (NGSS) and implemented at all grade levels.
  - STEM experiences guide and support all students as they prepare for the 21st century workplace.
  - Authentic assessment practices support high-quality science instruction.
  - Professional learning opportunities for administrators and teachers focus on the unique nature of science and STEM in teaching and learning.
  - Professional learning plans for departmentalized science teachers provide multiple sustained learning opportunities over a substantial time interval.
  - Science and STEM implementation strategies and resources are regularly communicated with school staff.
  - The school's science programming vision, opportunities, successes, and next steps are regularly communicated with the school community (students, parents, staff, partners, community members).
  - A variety of modern technologies are embedded in the instructional process.
  - Cross-sector partnerships with science centers, museums, zoos, and other STEM-related nonprofits and local businesses enhance STEM programming.
  - Science and STEM professional learning opportunities for teachers and administrators include partnerships with community organizations, museums, business, industry, and postsecondary education partnerships.
  - The school raises funds and procures resources to prioritize quality science and STEM education.

- Adequate levels of funding are allocated to prioritize quality science and STEM education.

Science Priority

- Please rank the following areas in terms of how they are generally prioritized at your school, with 1 indicating the highest priority.
  - Art/Music
  - Literacy/Language Arts
  - Social Studies
  - Math
  - Non-English Languages
  - Science
  - Physical Education/Sports

Teacher Experiences

- In the *previous school year*, how often did you...? (5-pt scale from 'Never' to 'More Than 10 Times')
  - Lead a science education initiative (e.g. creating a new science curriculum, leading a science after-school program, organizing a science family night)
  - Play an active role in a science education initiative (not as a leader)
  - Attend a planning meeting for a science education initiative

- How many times in the last week did you...? (Please enter a number)
  - Talk to another staff or faculty member about science in any way?
  - Talk to an administrator about science in any way?
  - Talk to another staff or faculty member about science education?
  - Talk to a parent/guardian of a student about science?
  - Talk to a student about science outside of a scheduled science class?

- On average, how many minutes per week do you spend teaching science content?
- On average, how many minutes per week do you spend planning for or collaborating about science curriculum and/or programs?
- On average, what percentage of your time is spent planning for or collaborating about science curriculum and/or programs?

Constructed Response

- What are examples of collaboration between science and non-science teachers in your school?
- What out-of-classroom experiences do you do right now to support science education?
- How is your school integrating science education right now?

Which categories describe you? Mark ☒ one or more boxes **AND** print the specific race(s) and/or origin(s).

☐ **White** – *Print origin(s), for example, German, Irish, English, Italian, Polish, French, etc.*

☐ **Hispanic, Latino, or Spanish origin** – *Print origin(s), for example, Mexican or Mexican American, Puerto Rican, Cuban, Dominican, Salvadoran, Colombian, etc.*

☐ **Black or African American** – *Print origin(s), for example, African American, Jamaican, Haitian, Nigerian, Ethiopian, Somalian, etc.*

☐ **Asian** – *Print origin(s), for example, Chinese, Filipino, Asian Indian, Vietnamese, Korean, Japanese, etc.*

☐ **American Indian or Alaska Native** – *Print origin(s), for example, Navajo Nation, Blackfeet Tribe, Mayan, Aztec, Native Village or Barrow Inupiat Traditional Government, Nome Eskimo Community, etc.*

☐ **Middle Eastern or North African** – *Print origin(s), for example, Lebanese, Iranian, Egyptian, Syrian, Moroccan, Algerian, etc.*

☐ **Native Hawaiian or Other Pacific Islander** – *Print origin(s), for example, Native Hawaiian, Samoan, Chamorro, Tongan, Fijian, Marshallese, etc.*

☐ **Other race or origin** – *Print race(s) and/or origin(s)*

(Note: the research team will use this information to send you a free Museum entry voucher, as well as to link your responses over time. All responses will have names removed before they are shared with other staff at your school or other Museum staff).

For your time spent completing the survey, we will email an entry voucher to the Museum for 4 people (est. value $109 - $136 depending on age range of those attending).

Your first & last name:_____
E-Mail Address:_____

Verbal Consent Script for Cross-Disciplinary Team Meetings

The following script will be read at the start of each meeting.

Hi. My name is [name]… and I work for MSI as a [title and team]…

MSI's research and evaluation and science leadership initiative teams would like to observe this meeting of your cross-disciplinary team. This is so that we can take notes to learn more about the progress and hurdles your team may be facing. This is part of the same study that involved a survey we sent you at the start of the year.

I will quietly observe the session and take notes. Those notes may include direct quotes made by people. But I will not write down the names or any identifying information of anyone who is quoted. There are no direct benefits nor any likely harm from participation.

~~Nothing~~ No audio or video is being recorded.

If in person: This is voluntary. Everyone has a notecard in front of them. Please write your name on the card. If you do not want to have notes taken about your participation, also write the word "No" on the card. ~~If you would not like for me to take notes about your participation, let me know right now and I will not include record notes that involve your participation.~~ You can also change your mind at any point in the meeting and tell me to stop taking notes about your role and I will do so with no questions asked. Please pass these cards to me.

If virtual: This is voluntary. If you do not want to have notes taken about your participation, please verbally say so or send me a private chat message right now. You can also change your mind at any point in the meeting and tell me to stop taking notes about your role and I will do so with no questions asked.

If you have any follow up questions about the study or my role, feel free to talk to me at the end of this meeting or e-mail me through your team leader.

Date: _____

Observation Rubric for Cross-Disciplinary Team Meetings

Start Time: _____ School: _____ Number of Attending Team Members: _____

End Time: _____ Observer: _____ Number of Team Members Not Observed: _____

Category Descriptions – Rubric Part 1

Clarify the Vision	Creating clarity about your team's vision and purpose provides a road map for how to live the vision throughout the year. Just because you see the vision doesn't mean your team does. Strategic messaging throughout the program to all stakeholders is key. Head off misunderstandings by offering a solid rationale for the vision, identify your key message, and deliver it consistently. Fostering enthusiasm for your vision helps generate excitement and build momentum. Some helpful and inspirational things to mention are the coming improvements for the science learning environment for students and the increase in quality of work as teachers, both of which will come from action planning.
Set the Expectations	Active participation (meetings and homework) by all members of the Cross-disciplinary School Team is required for this partnership with MSI. Be sure to complete all of your individual evidence gathering for all Items to Rate using the digital School Support Tool. Make connections between this program and others at your school. Ex: Continuous Improvement Work Plan, Instructional Learning Team, etc. Let them know what the process will look like for the evidence gathering and rating process, action planning and implementation. Be explicit with timetables and deadlines. Frequently use reminders and acknowledge completion.
Prioritize the Time	Budget time (your time, team's time, admin's time) so you do not miss any team meetings and prevent being pulled out during meetings. Minimize unnecessary time burdens. Be planned and prepared to maximize the time you do have. Being unprepared to lead others' valuable time is disrespectful and debilitating to team morale.
Listen to the Team	Work together with your cross-disciplinary school team to schedule a few check-ins. Listen to comments, questions, and concerns. Inviting dialogue helps draw people together and provides a forum for open discussion. Take the pulse, issue a survey, get on the balcony and assess team morale. Then act accordingly.
Assemble the Right Team	Make it absolutely clear that this will take a lot of effort, but you want them on this team. It is better to have a smaller, stronger team thanto have a negative influence on the team that corrodes cohesion and slows transformation. Build buy-in with the prospect of change, MSI memberships, and strategic use of your implementation budget.
Integrating All Voices	Solicit their perspective during team meetings. Try asking focused or narrow questions, rather than wide-open ones. Ask what they see as the needs for science—both at their grade levels and the whole school level. Have them identify what supports they need (i.e. resources, ideas, NGSS PD). Partner them with team members that will help bring out their voice. They could serve as thought partners between meetings when doing homework. Establish some office hours or some kind of parking lot/discussion area where they can ask questions between meetings. This could be in-person or virtual. Recognize the creative ways they already incorporate math and literacy into science (i.e. reading non-fiction texts or simple graphing). Use the "pod" method for integrating additional perspectives see page 57.
Push Time	Navigate what is happening in the moment, looking ahead, problem solving challenge, and keep it all moving forward.
Establish Team Meeting Roles	To help maintain the team's productivity, establish two team meeting roles. See table below. You may ask for volunteers or assign the roles. Some teams will want to maintain the same people in these team meeting roles every time they meet, while others may wish to switch it up. Start each meeting by delegating the two team meeting roles.

Date: _____

Observation Notes – Rubric Part 1

Category	Tally	Notes
Clarify the Vision		
Set the Expectations		
Prioritize the Time		
Listen to the Team		
Assemble the Right Team		
Integrating All Voices		
Push Time		
Establish Team Meeting Roles		

Date: _____

Category Descriptions – Rubric Part 2

Purpose-Driven	The plan is focused on driving the action that will lead to transformations in the learning environment for science.
Actionable	Each Action Item is bite-sized, well-defined, and begins with a verb.
Strategic + Sequential	The plan includes all materials, steps, and appropriate dates.
Shared Ownership	Every team member is responsible for a part of the plan. • Leverage individual expertise. • Include touchpoints for both support and accountability. • Name one person as the designated leader for each action item.
Mutually Reinforcing	Leverage the interconnectedness of the School Support Tool, incorporating multiple Items to Rate and Essential Elements.
Start with a Strong Plan	Review the plan to ensure it matches the Keys to Effective Planning and that expectations are clear.
Distribute Accountability	Incorporate layers of accountability to ensure team members are accountable to one another for progress rather than only to the Teacher Leader.
Communicate Clearly	Communicate early, often, and through varied mediums (email, text, in-person) to remind the team about benchmarks, next steps, and deadlines.
Support Your Team	Regularly check the pulse of team members responsible for action items, providing reassurance and assistance as needed.
Celebrate Small Successes	Keep track of progress by celebrating concrete milestones.

Date: _____

Observation Notes – Rubric Part 2

Category	Tally	Notes
Purpose-Driven		
Actionable		
Strategic + Sequential		
Shared Ownership		
Mutually Reinforcing		
Start with a Strong Plan		
Distribute Accountability		
Communicate Clearly		
Support Your Team		
Celebrate Small Successes		

Date: _____

Observation Debrief

1. **Which of the three main processes did the interdisciplinary team focus on during the observation?**
   - ☐ Evidence Gathering & Rating
     - ⟶ Which essential element(s) were being rated by the team during the meeting_____
   - ☐ Action Planning
   - ☐ Implementing
2. **What aspects of the meeting stood out to in terms of strategies employed? In terms of facilitation techniques? Were any specific strategies or techniques used to a greater or lesser degree? How did this appear to impact the meeting? What trends are starting to emerge related to areas of focus in the rubric? What trends may be emerging beyond the rubric?**
3. **Describe anything unusual or outside of the norm that may have occurred during the meeting. How did this appear to impact the meeting?**
4. **While teacher leaders are the focus of observations, how did the interdisciplinary team appear to react to the strategies or techniques employed during the meeting? Make note of interdisciplinary team members using or reinforcing strategies or techniques on their own.**
5. **Was there active reflection, dialogue, or ideation around equity in STEM education during the meeting? What were the contents and resolution around those conversations? Make note of topics of conversation related to how systems of power, privilege, or difference may need to be eliminated, changed, or created to allow for equal opportunity for all students in STEM education.**

APPROVAL OF STUDY AMENDMENT

DATE: June 5, 2024

TO: Lauren Applebaum

FROM: Museum of Science and Industry IRB

APPROVAL DATE: June 5, 2024

The submission below has been reviewed and approved by the MSI IRB to be compliant with 45 CFR 46.111.

Reviewer Name	Diana Acosta
Date of Review	June 5, 2024
Protocol Study Title	Science Leadership Initiative Longitudinal Study
MSI IRB#	MSI-IRB19-07_MOD08
Regulatory authority	MSI IRB
Principal Investigator	Lauren Applebaum
Review Type (check one):	☐Exempt* ☒ Expedited** ☐Full Board
If exempt, what category?	
If expedited, what category?	6

The modification is for personnel changes only. Related documents have been edited. There is **no change in risk to participants and no change has been reported in conflict of interest.**

Investigators and study team members must comply with all applicable federal, state, and local laws, as well as MSI Policies and Procedures, which may include obtaining approval for your research activities from other individuals or entities.

Please notify the MSI IRB if there are changes to protocol, any of the study related documents, the study team or source of funding. For IRB-related questions, please consult the MSI IRB by contacting irb@msichicago.org

Diana Acosta, PhD
IRB Administrator

Research Description

Background

The Museum of Science and Industry's Science Leadership Initiative (SLI) addresses the critical issue of student achievement and exposure to STEM by supporting science education on a whole-school level. Its School Partners Program guides schools through a process of gauging their current status in science education, creating an action plan, and implementing that action plan over the course of 3 years. MSI supports its school partners (which include a teacher leader, administrator, and cross-disciplinary team of multiple grade levels from each school) to elevate science programming at the whole-school level.

In past internal evaluations of the SLI School Partners Program, program participants rated their experiences and the impact of SLI on their institution extremely highly. However, we have no data on whether or not this impact is observable at institutions beyond SLI's direct participants. This research study aims to measure evidence of impact through the inclusion of a wide variety of administrators and instructional staff at SLI school partners, not just the individuals who have direct interaction with SLI programming.

A similar study to this was started, with IRB approval, in the fall of 2019. However, it was canceled in spring 2020 as a result of the pandemic. This proposal describes a similar project, with a few modifications based on our limited experience from that first attempt.

Objectives/Research Question

The object of this study is to measure whole-school change in the prioritization and implementation of science education as a result of participating in the SLI School Partners Program. Quantitative measures include a survey about changes in science instructional minutes, planning time dedicated to science education efforts, staff perceptions of science education at their school, and the types of science initiatives that are being implemented.

Research Question: What is the whole-school impact on science education as a result of participating in the SLI School Partners Program?

Subject Population

Participants will include administrative and instructional staff currently employed at schools entering the SLI School Partners Program in fall 2021. The study will follow this cohort of schools for all three years they participate in the program. Note: instructional staff will include those who teach all subject areas, not just science. But based on our first attempt at this study, we can expect an average of about 20 responses per school, which would mean 200-300 participants per year. We hope to have better participation this year, but do not think we'd ever have more than 100 responses per school which would be 1000-1500 participants per year.

Survey Measures

Recruitment Process

All15 schools currently enrolled in their first year of the SLI School Partners Program beginning in fall 2021 will be invited to participate. Instructional and administrative staff will be contacted to be a part of the study through the administrator and teacher leader who are participating in the SLI School Partners Program. The PI or another member of the study personnel will contact administrators in person during an SLI work session at the Museum and/or reach out to them via email (, page 6 for email sample). Administrators that agree to participate will be provided with an email template and a survey link (see page 7 for email template) to send out to their internal listserv of administrative and instructional staff.

In order to increase survey participation, a member of the Research and Evaluation team and a member of the SLI team will visit participating schools with QR codes (for participants to take the survey on their mobile devices/tablets), tablets with the survey preloaded, and paper copies of the survey. MSI staff will also bring pizza to encourage participation, **Pizza will be offered to all staff, regardless of whether they participate in the survey.** MSI staff will contact administrators or teacher leaders to arrange a time to visit the school. Participation in on-site data collection is completely voluntary. See page 8 for a template email to administrators/teacher leaders regarding on-site data collection and template text for calendar sign-ups.

Consent Process

The first page of the survey will contain a consent document and a 'Yes/No' click box indicating whether or not they agree to participate in the study. Participants will not be able to continue to the rest of the survey unless they select 'Yes.' If respondents complete the survey multiple times throughout the study, they will go through the consenting process each time they fill it out. See page 9 for survey consent form.

Research Procedures

The first survey will be sent at the beginning of fall 2021 to provide baseline information about the participating schools' current perceptions and implementation of science education. The e-mail will be sent to each school's teacher leader, and a template of that e-mail is attached to this application (see page 7). Identical surveys will also be sent at the end of each program year (3 additional times) to measure change over time.

Study Timeline:

- Survey 1: Fall 2021 – Beginning of Program Year 1
- Survey 2: Spring/Summer 2022 – End of Program Year 1
- Survey 3: Spring/Summer 2023 – End of Program Year 2
- Survey 4: Spring/Summer 2024 – End of Program Year 3

The surveys should take approximately 10-15 minutes to complete. See page 10 for full instrument. Each individual that completes a survey will be emailed an entry voucher to the Museum for 4 people (est. value $109 - $136 depending on age range of those attending). They will receive this entry voucher each time they complete a survey throughout the course of the study. Respondents will be sent voucher-related information to a personal email address of their choosing. Additionally, at each of the 4 data collection points, a raffle will be done within each school in which 1 respondent will be randomly selected to receive a $50 Amazon gift card. Also, any school with strong participation (approximately a third or more of all full-time instructional staff participating) will be given $250 paid directly to the school. The cohort of schools we intend to follow for the study period has been established, and school sizes (and thus the number of instructional staff) are variable. Using the amassed totals of instructional staff per school, research personnel will be able to determine a good faith effort on the part of schools to reach the above outlined threshold. This avoids stating a specific number that may not be feasible for a given school and avoids using a high percentage of participation that may cause undue peer pressure for potential participants.

Each time the survey is sent out, it will be sent out to the entire listserv of staff associated with instruction and education (re: not just to the individuals who took the first survey in fall 2021). However, our hope is that individuals take the surveys more than once, and in such cases, it would be advantageous from a statistical standpoint to be able to link their responses. Furthermore, it will be essential to know which school individuals are coming from, so that we can analyze their responses as an aggregate within their school site in order to measure institutional change over time. Therefore, we will be collecting the following identifying information (Note: some of this information is not identifying on its own, but could potentially be identifying in conjunction with other pieces of data collected in the survey – such as knowing the school where someone works and also the courses/grades they teach).

- Name of school – Used for both analysis and to link responses over time
- First and last name – Used to link responses over time and for mailing out Museum entry vouchers as an incentive
- Email address – Optional, used only to send Museum entry vouchers (All respondents will first be provided with the option to have vouchers sent to their school email , with the option to provide an alternative address if they choose)

Personally identifiable information will be replaced with unique and anonymous identifiers during the processing of collected data. A crosswalk document will be kept to link identities and the UIDs until the final survey is collected. Once that final survey is collected and processed, the crosswalk document will be destroyed.

Data Storage and Security for Surveys

All data will be stored digitally in two secure locations: (1) a password-protected Question Pro account (an online survey software program that will be utilized to collect the data) accessible only by the MSI Research and Evaluation department and IT staff, and (2) on the Museum's secure network drive, only regularly accessible by members of the Research and Evaluation department, and in extremely rare cases, by Museum IT staff. After data collection and data analysis has been completed, first and last names of

respondents will be removed from the data sets and replaced with an anonymous unique ID. These de-identified digital data will be kept on the Museum's network drive indefinitely.

Research Personnel

CONTACT INFORMATION AND BACKGROUND OF PI AND NON-PI STUDY PERSONNEL

Lauren Applebaum

- Director, Research and Evaluation
- MSI
- 773-753-1377, lauren.applebaum@msichicago.org
- PHRP certified in Jan 2024
- May assist in recruitment, data analysis, data collection.

Jessica Jones

- Senior Educator
- MSI
- 773-633-9558, jessica.jones@msichicago.org
- PHRP certified in May 2021
- May assist in recruitment, data analysis, data collection.

Laura Smith

- Senior Educator
- MSI
- 773-753-6268, laura.smith@msichicago.org
- PHRP certified in May 2021
- May assist in recruitment, data analysis, data collection.

Nicholas Felts

- Senior Evaluator
- MSI
- Nicholas.Felts@msichicago.org
- CITI training certified, expires 11/10/2027
- May assist in recruitment, data analysis, data collection

Urvi Mekala

- Illinois Institute of Technology Summer Intern
- Griffin MSI
- Urvi Mekala@msichicago.org
- PHRP Training certified, expires 6/4/2027
- May assist in data analysis

Priscilla Yee

- Research Assistant
- MSI
- Priscilla.yee@msichicago.org
- PHRP certified in August 2021
- May assist in recruitment, data analysis, data collection.

Participant Facing Documents

SAMPLE EMAIL FOR ADMINISTRATORS TO SEND TO SCHOOL STAFF TO PARTICIPATE IN SURVEY

Hello,

Below is a request for staff at our school to participate in the ongoing study about the partnership with the Museum of Science and Industry. If you have questions, the researcher's contact info is included in the message below.

My name is Lauren Applebaum, and I am the Director of Research and Evaluation at the Museum of Science and Industry, Chicago (MSI). As you may know, several staff at your school are participating in the Science Leadership Initiative School Partners Program with MSI. This program works to improve student achievement and exposure to STEM by supporting science education on a whole-school level.

As a part of this program, you may recall that we invited your school to participate in a research study at the beginning of the academic year. We have again prepared a survey for all administrative and instructional staff about the way science education is approached at your school, and how it could potentially change over time as a result of participating in program.

This survey is for administrative staff at all levels, and teachers of all subjects – not just science! And we invite you to participate again even if you participated last fall. Your continued participation will provide important feedback about how our program helps create whole-school change around science education over time.

Everyone who fills out a survey will be:

- Emailed **a free entry voucher to the Museum of Science and Industry for four people**
- Entered into a raffle **for a $50 Amazon gift card** from among all entries at that school.

Every school that has strong participation (approximately a third or more of all instructional staff participating) will also **have $250 donated directly to the school.**

The link to the survey is here: https://apple2021.questionpro.com

The first page contains more information about how this information will be shared, but please note that **the identity of everyone who takes the survey will be kept confidential.** Our research team will not share them with any staff at your school or any other staff at the Museum.

Thank you in advance. For questions about the study, you may contact me here:

Lauren Applebaum, Ph.D.
Director, Research and Evaluation
She/Her
Lauren.Applebaum@msichicago.org
773-753-2579
Museum of Science & Industry, Chicago
5700 S. DuSable Lake Shore Drive, Chicago, 60637

On-site Data Collection Request

Hello [administrator/teacher leader name]!

As we mentioned at the work session, we would love to bring pizza to your school this spring and ask instructional staff to fill out the SLI Longitudinal Study survey. **Staff do not need to take a survey in order to enjoy pizza! The survey is completely voluntary.**

Participation in the on-site data collection is also entirely voluntary. You do not need to sign-up for on-site data collection in order for your school to continue to be part of the SLI Study.

More details are included in this SIGNUP GENIUS link. Please sign up for a date for us to come with pizza! Please sign up by XXXXX.

Let me know if you have any questions.

Thank you!

Sign-Up Genius or Other Calendar Sign-Up Text

Thank you for your interest in having MSI visit your school! A member of the SLI team and a member of the Research and Evaluation department would like to come to your school to encourage participation in the SLI survey. We will bring pizza for all instructional staff, and we will have QR codes, tablets, and paper copies of our annual survey for the instructional staff to take the survey. **Staff do not need to take a survey in order to enjoy pizza! The survey is completely voluntary.**

Participation in the on-site data collection is also entirely voluntary. You do not need to sign-up for on-site data collection in order for your school to continue to be part of the SLI Study.

If you are interested in on-site data collection, please select a date below for MSI staff to visit your school.

SURVEY CONSENT FORM PAGE

You are being asked to participate in a survey about science education at your school. It is for administrators at all levels and teachers of all subjects – not just science! This survey is part of a study about how the Science Leadership Initiative School Partners Program at the Museum of Science and Industry, Chicago creates whole-school change around science education.

KEY INFORMATION:

- Your participation involves the filling out of a survey, estimated to take 10-15 minutes.
- There are no additional direct benefits for participation.
- We do not anticipate any harm or risk in your participation.

- This is voluntary. You can choose not to participate. There is no penalty for doing so.
- You can choose to stop filling out any survey at any time, with no questions asked.
- **This survey asks you to provide your name and the name of your school. This information will allow us to link your responses over the course of the study. However, your identity will be kept confidential by the research team. Only the research team will have access to this information. All responses will be anonymized before they are shared with any other Museum staff or any staff at your school.**
- Everyone who completes a survey will receive a voucher good for a group of four to attend the Museum ($109-$136 value) and be entered into a drawing for **a $50 Amazon gift card**. Every school that has strong participation (approximately a third or more of all instructional staff participating) will have **$250 donated directly to the school.**

This research is being conducted by the Research and Evaluation department at the Museum of Science and Industry. The Director of that team is available to answer any additional questions you may have, now or later. She may be contacted at:

Lauren Applebaum, Ph.D.
lauren.applebaum@msichicago.org
Office Phone: 773-753-2579

If you agree to participate in this study, please click "Yes" below and begin the survey.

- Yes, I agree to participate in this study.
- No, I do not agree to participate in this study.

2021-2022 SLI WHOLE SCHOOL INSTRUCTIONAL STAFF & ADMINISTRATOR SURVEY

This survey will be distributed to all teachers at the school starting the 2nd week of each school's academic year. A version of the survey will be distributed to all teachers (incl. those who did not participate in the first survey) about one month before the end of that school's academic year. It is expected that a revised version of the survey will be distributed to all teachers at all schools at the end of the 2022-2023 and 2023-2024 school years. Any revisions will be submitted to the IRB as an amendment.

Demographics

- What is the name of your school?
  - Ascension School

- Coles
- Everett STEM Academy
- Hamlin Upper Grade Center
- Hameline Elementary School
- Holy Family Catholic Academy
- Rosa G. Maddock
- McNair School
- Alfred Nobel Daul Language School
- St. John the Baptist
- OA Throp Scholastic Academy
- Joseph Warren Elementary School

- How many years have you worked at this school?
- How many years have you worked in education?
- What is your highest level of completed formal education?
  - Less than high school degree
  - High school degree or equivalent (e.g., GED)
  - Associates degree (2-year or equivalent)
  - Bachelors degree (4-year or equivalent)
  - Master's degree or equivalent
  - M.D./J.D./PhD or equivalent
  - Other – Specify:_____
- What best describes your role?
  - Departmentalized Teacher
  - Self-contained Teacher
  - Administrator
  - Other – Specify:_____
- What do you teach?
  - Science subjects, non-science subjects, both and non-science subjects, n/a or did not respond
- What grade levels do you teach (if teacher) (Check all that apply)
  - PK, K, 1, 2, 3, 4, 5, 6, 7, 8
- What is your gender?
- How would you classify the socioeconomic status (SES) of the community your school serves?
  - Lower SES, lower-middle SES, middle SES, upper-middle SES, upper SES
- Are you currently part of the cross-disciplinary team that meets as part of the MSI Science Leadership Initiative program?
  - Yes
  - No

Science Education Culture

- Please rate the following items based on the degree to which you agree. (5-pt scale from 'Strongly Disagree' to 'Strongly Agree')
    - At my school, science education is a priority.
    - I regularly use student-centered instructional practices in my classroom.
    - My students engage in hands-on learning on a regular basis.
    - I feel comfortable incorporating technology into my classroom lessons.
    - Students at my school have access and opportunity to participate in science education.
    - At my school, science education is a lower priority.
    - I play a role in science and/or STEM education at my school.
    - There is another staff person at my school I can go to for support in science education.
    - Staff at my school view me as a resource for science education.

- How often do students do each of the following in your class(es)? (5-pt scale from 'Never' to 'Daily or Almost Daily')
    - Apply science concepts to explain natural events or real-world situations
    - Ask questions and define problems
    - Develop and use models
    - Plan and carry out investigations
    - Analyze and interpret data
    - Use mathematics and computational thinking
    - Construct explanations and design solutions
    - Engage in argument from evidence
    - Obtain, evaluate, and communicate information

- Please rate the following questions using the scale below (3-pt scale from 'Not Present at All' to 'Very Present')
    - How strong was the presence of science at your school 1 year ago?
    - How strong is the presence of science at your school currently?
    - How strong do you think the presence of science will be at your school 1 year from now?

Teacher Attitudes towards Science Education

- Please rate the following items based on the degree to which you agree or disagree with each statement (5-pt scale from 'Strongly Disagree' to 'Strongly Agree').
    - The inclusion of every student in science programming is a priority.
    - Teachers share and collaborate openly, without judgment or negative repercussions.
    - Students and families are strategically integrated into school collaboration and planning.
    - Science is promoted as a body of deep conceptual knowledge that is central to our world.
    - Decision-making for science programming is done through team collaboration.
    - Collaborative structures enable sustained implementation of science programming.
    - Sufficient time for science learning is provided in every grade and for every student.

- Science curriculum and instructional materials are aligned with Next Generation Science Standards (NGSS) and implemented at all grade levels.
- STEM experiences guide and support all students as they prepare for the 21st century workplace.
- Authentic assessment practices support high-quality science instruction.
- Professional learning opportunities for administrators and teachers focus on the unique nature of science and STEM in teaching and learning.
- Professional learning plans for departmentalized science teachers provide multiple sustained learning opportunities over a substantial time interval.
- Science and STEM implementation strategies and resources are regularly communicated with school staff.
- The school's science programming vision, opportunities, successes, and next steps are regularly communicated with the school community (students, parents, staff, partners, community members).
- A variety of modern technologies are embedded in the instructional process.
- Cross-sector partnerships with science centers, museums, zoos, and other STEM-related nonprofits and local businesses enhance STEM programming.
- Science and STEM professional learning opportunities for teachers and administrators include partnerships with community organizations, museums, business, industry, and postsecondary education partnerships.
- The school raises funds and procures resources to prioritize quality science and STEM education.
- Adequate levels of funding are allocated to prioritize quality science and STEM education.

Science Priority

- Please rank the following areas in terms of how they are generally prioritized at your school, with 1 indicating the highest priority.
  - Art/Music
  - Literacy/Language Arts
  - Social Studies
  - Math
  - Non-English Languages
  - Science
  - Physical Education/Sports

Teacher Experiences

- In the *previous school year*, how often did you...? (5-pt scale from 'Never' to 'More Than 10 Times')
  - Lead a science education initiative (e.g. creating a new science curriculum, leading a science after-school program, organizing a science family night)
  - Play an active role in a science education initiative (not as a leader)
  - Attend a planning meeting for a science education initiative

- How many times in the last week did you...? (Please enter a number)

- Talk to another staff or faculty member about science in any way?
- Talk to an administrator about science in any way?
- Talk to another staff or faculty member about science education?
- Talk to a parent/guardian of a student about science?
- Talk to a student about science outside of a scheduled science class?

- On average, how many minutes per week do you spend teaching science content?
- On average, how many minutes per week do you spend planning for or collaborating about science curriculum and/or programs?
- On average, what percentage of your time is spent planning for or collaborating about science curriculum and/or programs?

Constructed Response

- What are examples of collaboration between science and non-science teachers in your school?
- What out-of-classroom experiences do you do right now to support science education?
- How is your school integrating science education right now?

Which categories describe you? Mark ☒ one or more boxes **AND** print the specific race(s) and/or origin(s).

☐ **White** – *Print origin(s), for example, German, Irish, English, Italian, Polish, French, etc.*

☐ **Hispanic, Latino, or Spanish origin** – *Print origin(s), for example, Mexican or Mexican American, Puerto Rican, Cuban, Dominican, Salvadoran, Colombian, etc.*

☐ **Black or African American** – *Print origin(s), for example, African American, Jamaican, Haitian, Nigerian, Ethiopian, Somalian, etc.*

☐ **Asian** – *Print origin(s), for example, Chinese, Filipino, Asian Indian, Vietnamese, Korean, Japanese, etc.*

☐ **American Indian or Alaska Native** – *Print origin(s), for example, Navajo Nation, Blackfeet Tribe, Mayan, Aztec, Native Village or Barrow Inupiat Traditional Government, Nome Eskimo Community, etc.*

☐ **Middle Eastern or North African** – *Print origin(s), for example, Lebanese, Iranian, Egyptian, Syrian, Moroccan, Algerian, etc.*

☐ **Native Hawaiian or Other Pacific Islander** – *Print origin(s), for example, Native Hawaiian, Samoan, Chamorro, Tongan, Fijian, Marshallese, etc.*

☐ **Other race or origin** – *Print race(s) and/or origin(s)*

(Note: the research team will use this information to send you a free Museum entry voucher, as well as to link your responses over time. All responses will have names removed before they are shared with other staff at your school or other Museum staff).

For your time spent completing the survey, we will email an entry voucher to the Museum for 4 people (est. value $109 - $136 depending on age range of those attending).

Your first & last name:_____
E-Mail Address:_____

42 W. Madison | 2nd Floor | Chicago, IL 60602
Telephone: (773) 553-4444
Fax: (773) 553-2421

September 27, 2021

Fran Mast
Museum of Science and Industry, Chicago
5700 S. Lakeshore Drive
Chicago, IL 60605

Dear Fran Mast,

Thank you for your interest in conducting research in The Chicago Public Schools. Due to the COVID-19 health crisis, the district is currently not considering new proposals for primary or secondary research **unless a project has been explicitly identified as high-priority by our district leaders**. Your proposal was flagged as such by the CPS Office of STEM. Therefore, the Research Review Board has reviewed and decided to approve the project titled "A Study of the MSI Science Leadership Initiative". This approval is for the research activities as described within the RRB proposal dated June 10, 2021, as well as the additional responses/modifications communicated on September 13, 2021. **All study protocols are subject to principal approval at each individual school.**

Although your study is approved, school principals have final authority over activities that are allowed to take place with their school's staff, students, or communities. If data collection continues beyond a year from this approval, please complete the Modification & Continuing Review Process Form which can be found on the research website. Also, please note that our guidance surrounding the evolving COVID-19 crisis is subject to change. We may request additional considerations or modifications to your proposal, subject on district guidance.

Upon completion of the research study, a copy of the final report or summary of the results must be provided to the Research Review Board. The Board reserves the right to use the information in the research report or summary for planning, solicitation or grants, and staff development.

Please note that your study has been assigned Project ID #1687. If you have any questions, please contact our office by email at research@cps.edu.

Sincerely,

Sarah Dickson
Co-Chair, Research Review Board

Jose Torres
Interim Chief Executive Officer

Department of STEM
Office of Teaching and Learning
501 W. 35th Street · Chicago, Illinois 60616

Maurice Swinney
Chief Education Officer

September 10, 2021

Dear Chicago Public Schools Research Review Board,

The Department of STEM has reviewed the CPS proposal entitled: "A Study of the MSI Science Leadership Initiative" (Project ID #1687) and found that is aligned with our office's goals and strategic plans. Many of our STEM schools participate in the Science Leadership Institute and the results of the study will directly impact programming decisions and support provided by our office. We have no concerns about the proposed study at this time.

Sincerely,

Kelli A. Easterly
Executive Director of STEM
Chicago Public Schools

42 W. Madison | 2nd Floor | Chicago, IL 60602
Telephone: (773) 553-4444
Fax: (773) 553-2421

07/12/2024

Lauren Applebaum, Ph.D.

Dear Dr. Applebaum,

Thank you for your interest in conducting research in The Chicago Public Schools. The Research Review Board has reviewed your Modification proposal 06/28/2024 for research, titled: A Study of the MSI Science Leadership Initiative.

The Research Review Board has completed the review of your Modification proposal and has approved your request to conduct this research. Although your study is approved, school principals have final authority over activities that are allowed to take place in the school. If data collection continues beyond a year from this approval, please complete the Modification & Continuing Review Process Form through IRBManager.

Please note the following--

Background Check Level Required: Level I

Other Notes: Possible in school interactions

Upon completion of the research study, a copy of the final report or summary of the results must be provided to the Research Review Board. The Board reserves the right to use the information in the research report or summary for planning, solicitation or grants, and staff development.

Please note that your study has been assigned Project ID #2021-1687. If you have any questions, please contact our office by email at research@cps.edu.

Sincerely,

Sarah Dickson
Co-Chair, Research Review Board