SCIENCE MUSEUM FUTURES

Institute for
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Science Museum Futures

Although the last quarter of the 20th century was a period of near exponential growth for science museums, both in the number of institutions and in the numbers of users, the first decades of the 21st century have not been so kind, with widespread evidence of weakness throughout the sector.[1] Beyond usage, the museums have encountered other challenges to their long-term success, including the continuing failure of institutions to fully address the needs of all sectors of society.[2] Not surprisingly, there have been many discussions around re-thinking science museum practice and even some movement towards actualizing much of this rhetoric,[3] but until recently, the community generally found it easy to more or less continue business as usual. Recent societal shocks such as the "Great Recession" and the Covid-19 pandemic changed things, starkly revealing many of the flaws inherent in current science museum practice. Although all of us are currently immersed in these realities and challenges, we need to remember that there are other, equally daunting challenges lurking just over the horizon, including:

- The long-term, unresolved problems of systemic social and economic inequity which will require science museums to directly address who they do and do not serve and how.[4]

- The explosive growth and increasingly ubiquitous use of digital and virtual technologies which will continue to undermine traditional assumptions about both how institutions deliver the services they provide, as well as the skills and training staff will need in order to deliver those services.[5]

- The disruptions created by a never-ending string of science-related global threats such as climate change, loss of biodiversity, global pandemics, and the disruptions created by automation and artificial intelligence which will demand that science museums devote ever-greater attention to these types of large-scale, global issues.

The convergence of all these trials and tribulations represents not only a threat but also an opportunity. This is a moment when science museum professionals need to reflect upon their current practices, reassess how they wish to rebuild as well as re-envision their relationships with the communities they strive to serve, and recalibrate their missions to ensure that they remain relevant now and in the future. Of course, how any particular science museum opts to address these challenges and opportunities is likely to hinge on a wide variety of factors, not least of which is institutional size, location and history. Small and medium-sized institutions are particularly vulnerable to these types of societal perturbations as they are operating with smaller staffs and typically from a smaller and often a less secure funding base. Still, small to medium-sized institutions also have advantages over their larger cousins, including greater nimbleness and often stronger ties to their local communities.

With funding from the National Science Foundation, and in collaboration with the Association of Science and Technology Centers, Association of Children's Museums and Immersive Learning Research Network, the Institute for Learning Innovation initiated the *Science Museum Futures Project* as a way to help facilitate this process of reflection, rebuilding and recalibration. Although just a one-year project, it represents an opportunity for the science museum community, particularly those within the small to medium size science museum sector, to seriously and collectively re-imagine its future; not just the very short-term future, but the longer-term future of the next decade and beyond.

Science Museum Futures: Process

Over the course of this one year project, the *Science Museum Futures* project staff sought to engage both the professional science museum community as well as the broader publics served by the science museum community in this re-envisioning process. Supported by the hard work and direct involvement of 40 diverse (as a function of expertise, years of experience and role, background, demographics, geography), thoughtful STEM learning professionals, project staff queried and surveyed hundreds of professionals and community members; again with an eye to ensuring that the needs and realities of small to medium-size institutions were accommodated. Emerging from our process — multiple iterations of deep engagement with core participants, followed by input and comment by the broader community, followed by synthesis and further review — were a series of essential actions/processes that science museums can do to enhance the prospects of their long-term survival and success. Foundational to the entire process was a commitment to ensuring that any solutions offered be mission-consistent, financially sustainable and prioritize the well-being-related needs of all members of the community, particularly four key areas: [6]

- **Personal Connection** — catalyzing wonder, interest and a sense of identity with STEM; feelings that foster a sense of belonging and long-term engagement;

- **Intellectual Empowerment** — facilitating STEM-related curiosity and learning, and the ability to utilize STEM in the service of solving societal challenges;

- **Social Cohesion** — making it possible for all sectors of a community to experience STEM learning as a natural and integral part of their family, group and community's heritage and life experience;

- **Physical Security** — ensuring that all users have opportunities to gather (physically or virtually), interact, explore and learn within a safe, healthy, anxiety-free and restorative environment.
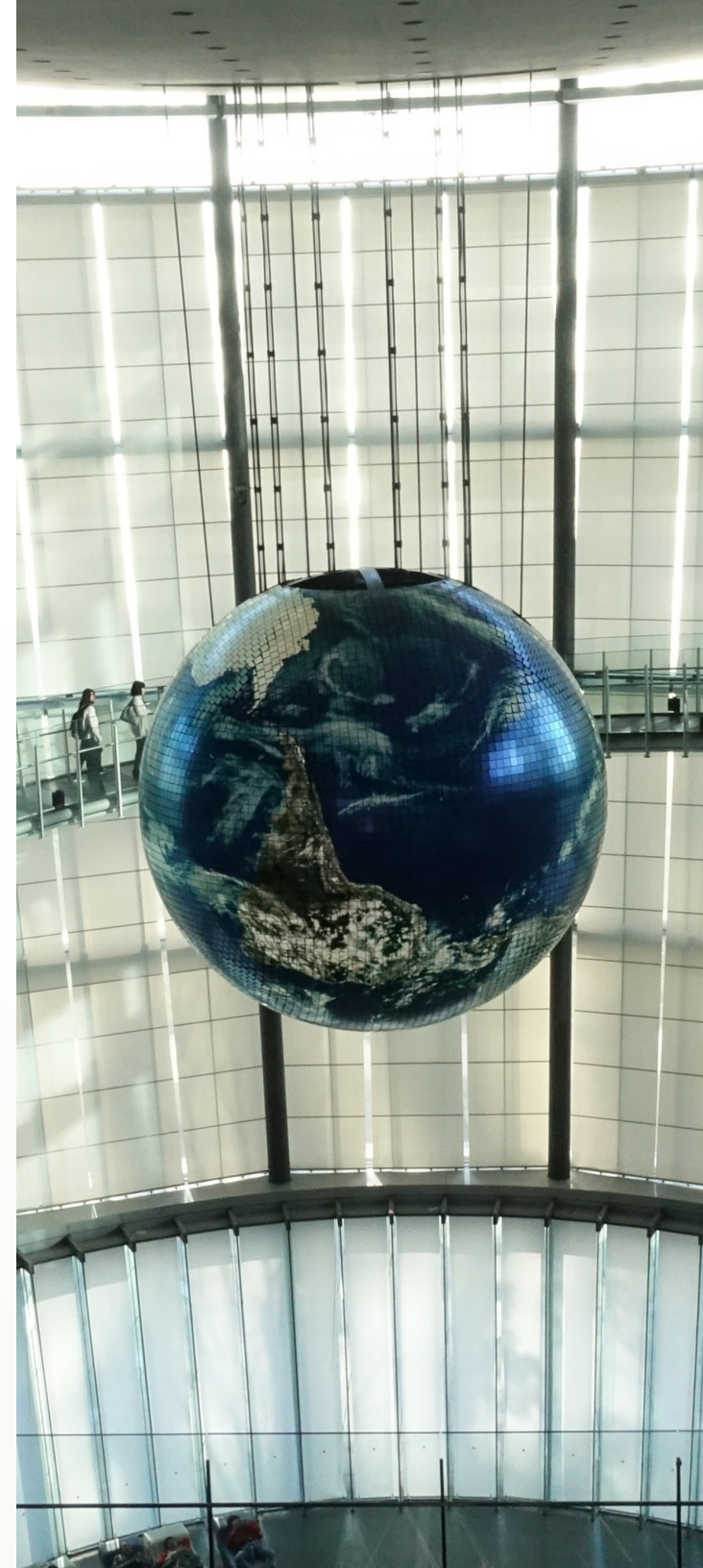
Science Museum Futures: Outcomes

The process outlined above resulted in enthusiastic and rich conversations. Though many participants were significantly challenged by the community consultations, finding the initiation of conversations with community members who do not find science museums to be relevant or welcoming, very difficult, the project resulted in the generation of 11 "novel" ideas for how science museums can transform their practices in ways that more directly serve the well-being-related needs of their communities (Appendix A). Although individually, each of these ideas represents a relatively small step forward in reinventing science museum practice, collectively these ideas suggest three critical ways in which the science museum community might dramatically rethink their focus and day-to-day practices. Interestingly, all three of the resulting themes were things that others have suggested before, and in some cases, already represent areas of active exploration by some members of the community. Though these themes may strike some as familiar, taken together, these ideas are actually quite revolutionary, and if widely and collectively implemented, would precipitate a major transformation of the science museum community.

Move from a focus on STEM as an academic topic to be learned to STEM as a topic that solves community-relevant problems and issues. Several of the proposed projects underscored the importance of moving away from an emphasis on traditional "fundamentals of STEM" type exhibitions and programs to efforts that re-focused the work of the science museums on helping to solve community-focused concerns and topics. *(Science Museum Start-up & Skills Marketplace; Science Museums as Spaces of Deliberate Democracy; Investing in Community; Wedding Planner; Eating Our Way into the Future; Reimagine Science Museum Digital)*

Transformation of the role of the science museum from "expert" to "learning resource." Participants noted the need for institutions to shift away from "we are the experts and know what you need to know" (a deficit model) to an asset model of "how can we be a better resource for what you want and need to learn." To support this shift, institutions need to make a greater investment in staff, with the issue of Diversity, Equity, Inclusion and Access representing an important first step involving changes in staff training *(Engaging Staff as Stakeholders)*; hiring practices *(Building a Diverse Workforce)* and a transition away from the building to greater work out in the community *(Community Culture Centers)*.

Move away from the science museum as an island of expertise to more of a model where the science museums is just one, but integral, part of a greater ecosystem of effort: The events of past few decades demonstrate that science museums cannot have the level of significant impact they wish to have as long as they continue to work alone and unilaterally. Collective action is the only route to success, whether that is at the local or national level; collaborative, ecosystem-wide solutions are urgently needed. *(Science-Interest Revolution; Billion Dollars for Free-Choice Learning)*

Reflections on a Better Science Museum Future

This project occurred in a specific context and a specific moment in time, and as we write this report we appreciate that that this is a moment of recovery, rebuilding and refocusing, a time of exploration and discovery around the use of digital assets, openness to innovation, a recognition for the need for speed and the ability to create nimble responses, and also been a time when our magnificent buildings and exhibitions were revealed to be both assets and deficits.

It is in this context that we offer up these suggestions for how science museum professionals might best not only reimagine, but actually change the way they meet the well-being-related needs of their communities. For example, local challenges like food insecurity or immunization hesitancy not only create opportunities for supporting greater STEM understanding but demand that museums act in ways that directly improve people's day-to-day lives. Making these kinds of changes will require deep conversations within the institution and with key stakeholders as it may require the organization radically reconsider its mission, vision, and values statements. Wherever an institution lands in these conversations, one thing is clear, science museums will need to become increasingly nimble and responsive, as they increasingly strive to focus on the topics that are most relevant and of greatest value to the communities and the larger society they serve.

The *Science Museum Futures* project challenges museums to become a better resource for their community, a first step of which requires bringing more diverse community voices to the table as part of strategic planning, hiring practices and program planning. Genuine relationship building is at the core of this work. Passive, one-off interactions will prove insufficient for success. Long standing partnerships will create connections that will broaden the communities that gain from all that science museums have to offer. By allowing desired audiences to join the ideation and decision-making process, museums have a chance to move toward a sense of shared ownership and commitment to sustained success.

Beyond the work of each individual museum lies an opportunity to build partnerships across similar and complementary organizations to develop an ecosystem of organizations working together to collectively ensure that free-choice/informal learning is accessible, valuable, and sustainable for all. Partner organizations could be broadly defined to include a variety of constituents, including corporate sponsors, social justice and advocacy organizations, as well as museums and centers with topical foci beyond STEM. Science museums have the capacity to serve as community hubs of innovation, as idea incubators, and catalysts for enacting synergistic and collaborative approaches to solving community problems. These are not easy roles to play, but they afford the best opportunity for science museums to be the kind of transformational change agents they desire to be, and the best chance for the community as a whole to be relevant and thrive in the future.
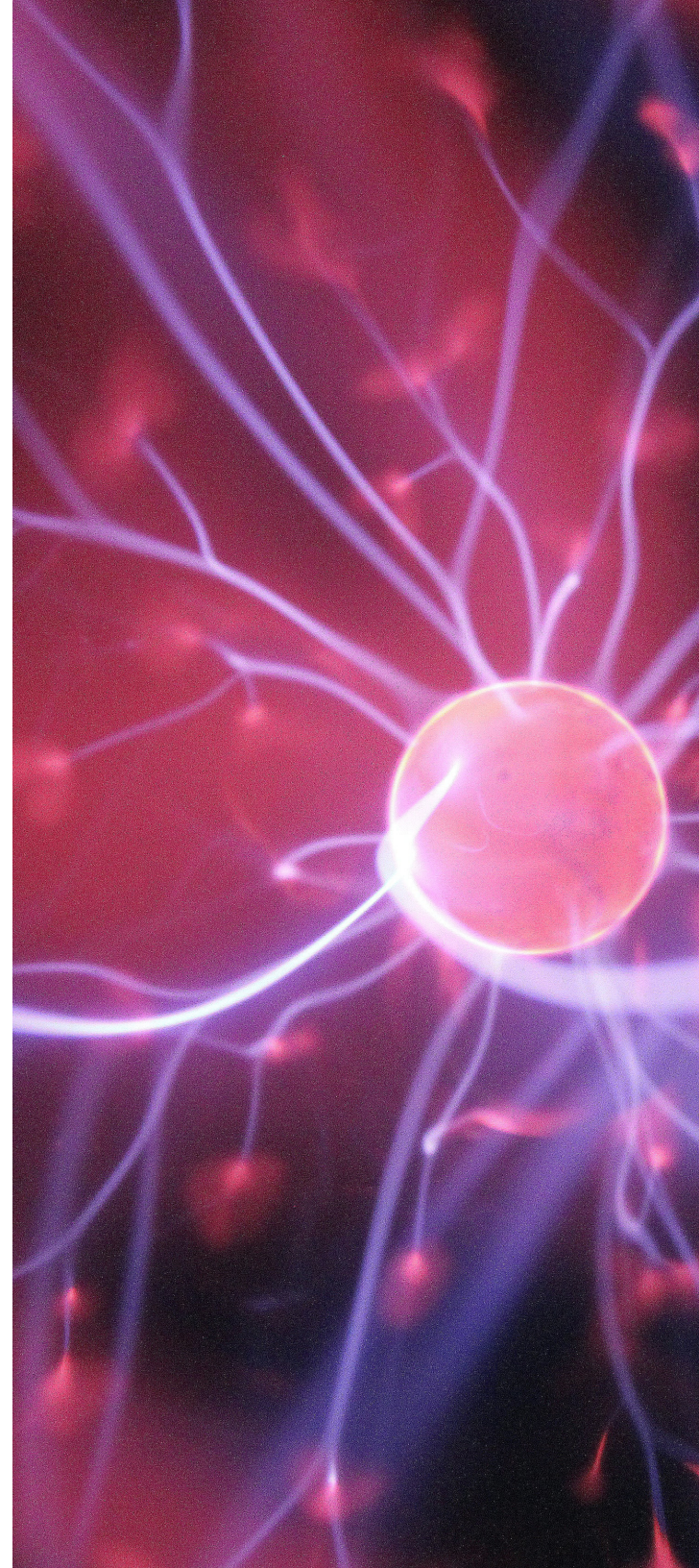
Appendix A

Project Ideas

Science Museum Start-up & Skills Marketplace

Nik Honeysett | Meghan Lee | Jackie Wirz

Summary

Based on the premise that a museum's mission is part social obligation and part financial obligation, we recommend a project that is not only financially self supporting, but can lift up the community by providing essential and relevant contemporary skills, a programme of work that is intellectually stimulating, and connects them to new careers paths, new employers and grows their networks. At the root of our recommendation is evolution from "science museum", where objects, ideas, themes and concepts are housed, displayed, explained and experienced, to "science lyceum" a physical and virtual stage for training, apprenticeship, instruction, social and cultural experience, network building, and personal empowerment.

We imagine the science museum as a place to teach tradable, contemporary skills that are rooted in science and technology, provide a step towards single-owner business or startup opportunities, and would allow community members to enter the workplace on their own terms. The program may act as an interim step between high school and college, high school and business, or college and business, in addition to providing career transitions or reskilling in towns or cities where traditional industries are closing. Skills training would be augmented by building business and entrepreneurial skills and would be credentialed, in partnership with community colleges and sit squarely in the high school and adult learning demographic. Local businesses, chambers of commerce, business and tech associations, and local startup communities would be key partners in the effort.

Operation

- Skills development and training would be taught on a semester basis and start with online, self-paced instruction, any subjects would have to be taken in conjunction with business practices and philosophies.

- Semesters would be by topic and programmed alongside major exhibitions so as not to dilute the museum's attention and focus on a topic.

- Products and services might include design (from graphic to industrial to computer gaming), role of digital or technology in arts, crafts, e.g. Computer Aided Design and 3D printing, computer, technical and mechanical services.

- Online classes are augmented by in-person, onsite meet-ups and events at the science center, perhaps monthly to encourage communal learning.

- Virtual office hours are available to connect with professionals or mentors in the appropriate field to offer personal support to students.

- Each semester would have a capstone event, a day or a week that brings learners, community college, businesses and startups together in a marketplace format that also flips the job fare model. The goal of the event(s) would be to showcase student work with business and startup entities and with the public.

For example, a semester might be Game Design, so exhibitions and programming would be focused on this topic. The online component might be game theory, augmented by an exhibition on the adjacent topics, etc., and feature student work. Other semester topics might be computer programming (code camps offer

a great model), music production, video production, robotics, AI, computer graphics, food, fashion, sports science, etc.

To best serve the community and ensure the experience and learning opportunities are maximised, the most effective approach would be to ensure that the programme is planned over the long term rather than on a case-by-case basis. Courses can be sequenced so that semesters build on one another and learners can plan their experiential learning opportunities. A key factor will be that topics and themes are connected and can be viewed as both individual opportunities but also as an evolving and growing learning opportunity. To create loyalty in the programme long term, it will be important that the content not wholly rely on a previous experience, i.e. learners should not "miss out" on an experience and then feel the loss of it subsequently; rather the cumulative experience should be additive.

Impacts include increased engagement, repeat visits, and a stronger sense of community as communities engage repeatedly with each other.

Sustainability

- Online components would be developed through partnership and collaboration between science museums and be reusable - a create-once curricula, delivered many times.
- Courses would be fee-based, and learners might be able to sign up for multiple semesters.
- Courses might be offered in partnership with local community colleges and shared tuition fees.
- Because the model is based on a high degree of community, public and private collaborations, a range of grants and corporate funding might be available
- Startup costs for development of the online component might be opportunities for federal grants given high degree of collaboration
- Partnerships with businesses and startups would be opportunities for sponsorship

- Local philanthropists and foundations might be interested in supporting based on particular demographics and the high skills- development and education component.
- City or state grants might be available for job-based stimulus funding for economically challenged areas.

Outcomes & Success

Ultimately, success will be determined by adoption, repeat visits to the science museum and improved community connection. Learners might already be affiliated with the museum, but the goal would be to reach currently unserved communities and individuals.

Success can be measured by:

- Tracking community uptake and individual progress for the online self-paced activities.
- Measuring attendance of on-site events and meet-ups
- Adoption by multigenerational communities and, new audiences connected to the museum
- Repeat visits: either new audiences that discover the museum through these learning experiences, or existing audiences who visit more frequently because of the programming.

The combination of online and onsite modes are intended to provide scale and efficiency and promote experiential learning which is essential to breathing life and energy into a meaningful engagement. To increase the impact of science museums, connecting experiential learning across multiple touch points will enhance the relationships between the participants and the organizations.

Multiple modes and experiences give a longitudinal opportunity to explore all 4 basic needs that science museums support. Importantly, with multiple touch points, there are opportunities to strengthen community engagement and ties outside of the museum by offering joint programming. Most importantly, joint programming could make the museum the social connector and catalyst for collaboration.

Challenges will include insight into what activities and topics will resonate with communities, and the potential for "digital divide" issues, particularly for economically-challenged demographics. The in-person experiences might face challenges both from navigating the new normal but also the ability time availability to get to the museum.

Science Museums (SMs) as Spaces of Deliberate Democracy

Judith Koke | Michael Lewis | Martin Storksdieck

BIG IDEA:

Science Museums must shift their role from science education to demonstrating the role of science processes and evidence in responding to important socio-political or socio-cultural issues. Museums hold significant public trust. They can use this currency to:

1. Model civil civic discourse and conversations about societal issues in a manner that demonstrates that constructive discussion and multiple perspectives result in innovative, more stable and better decisions.

2. Model the use of evidence – that we can jointly explore and agree on what the scientific evidence is that underlies a social issue, and only then consider various perspectives in the translation of that evidence for policy or other forms of decision-making.

Assumptions that inform this Framework:

1. This work represents a shift in focus – not a dramatic change. Many science centers or science museums are already hosting forums, camps and exhibitions that touch on societal issues.
2. Programs or events can be hosted onsite or in community / in partnership with other organizations.
3. This is an emphasis on both content AND process.

We suggest to model ways of speaking and listening that open, rather than close, conversations.

4. The point of the discussion is not about the RIGHT answer, but about best choice in this moment, based on the evidence we have and on the agreement we can achieve, taking multiple perspectives into account. Central to deliberate democracy is the joint agreement on evidence, deep listening to other voices, and the transparent reflection on foundational beliefs and values.

How? Through all programs/exhibitions:

*   Decision-Making Camp for middle/high school students
*   Exhibitions (a la Koshland Science Center) in which evidence from a number of fields is offered – and individuals (or groups) make decisions – and then see the consequences of their decisions. Not a right answer but rather demonstrating the interconnectedness of decisions and underlying trade-offs when scientific evidence is translated into policy solutions in finite resource situation.
*   Climate change games /role play. Assign a group a role (biologist, politician, industry rep, etc.) and argue from that position in UN-type negotiations (can be done at smaller scale, such as about opening hiking trails for mountain bikers)..
*   Science café – turn it into a deliberate debate event by adding Oxford debate style elements.

Funding:

1. No new funding streams required – it is a shift in current programmatic content choices.
2. New funding opportunities may arise: those who do not usually fund STEM directly (e.g., Community Foundation in OR; local funders might be willing to collectively support efforts under the banner of citizenship education).
3. Earned Income: Increased relevance should result in increased enrollment. New programs might lead to expansion of membership and new visitors.
4. In some communities this approach might attract public support and funding from local, state or national governments.

Evaluation:

1. Participants/visitors report an increased sense of the relevance of science and evidence (processes and content) in their everyday lives. They trust that science can inform public decision-making.
2. Public perception of the SM both as an important public institution and as personally relevant space is improved. Study could start with baseline and monitor simple scales over time.
3. Community participation in civic decision-making is increased.
4. Model of deliberate democracy of SM is being adopted by other community organizations.

Investing in Community

Tara Chklovski | Paul Martin | Troy Thrash

Invest in community. Open the spaces for events like COVID testing, farmers markets, hire community members so that funds remain in the local community based on the needs of the community.

Section 1:

What is the basic outline of this approach? How is it novel? How does it connect to the larger communities aspirations for well-being – specifically how does it support one or more of the 4 basic needs (Personal Identity and Fulfillment, Intellectual Exploration and Empowerment, Social Connection and Cohesion)?

OVERALL IDEA:

This is a proposal for a process for small/medium museums to incorporate and center community needs in the way that they do business.

- Relationships. Tools for building relationships with constituents; Communities are the investment of the science center

  » Ongoing engagement would inquire about the needs and gaps that a science center can fill (e.g., education, jobs, food security, etc.) to support the community

  » Enhance the personal impact of the science center to meet the communities need

Section 2:

Describe how this idea would work or function in the science museum.

- Determine who the community is and how best to reach them

- Core components to consider: the science center's relevancy to a constituent group;

  » Identify who the "community" is (e.g., neighborhood, town, city, state, schools, etc.)

    ▪ The hope to make the science center a part of the ecosystem of constituents lives through repeated engagement (e.g., adult nights, hosting farmers markets, etc.)

    ▪ Foster shared ownership of the space

      - Make members of the desired community volunteers, board members?, committee members?

      - Free access to the museum and discount at the restaurant/store

  » Listening to the community - build trust through relationships

  » Identify potential value propositions for the community to be a part of the science center's work

  » Convene all members of the community (all players of the Science Center's ecosystem) who may have a role or interest in the success of the science center

    ▪ Build credibility across groups

    ▪ Facilitate discussions as a trusted entity

    ▪ Share knowledge across constituents rather than just one group at a time

    ▪ Goal of the conversation here is to final mutually beneficial solutions

  » Find common threads across all constituents to identify key points of impact that will create value for the center, community, and potential partners

Section 3:

How does this idea support the long-term sustainability of the museum? How is it funded?

- Attract a broad audience that has a vested interest in the success of science centers

- A regular summit of stakeholders will inform the value proposition of science centers for the community

- Encourage corporate sponsorship as an investment in early career pathway development for local talent

- Implementing this effort will require a time commitment from the science center's leadership

- There may be some obvious gathering place within the community to host dialogues that will inform the future engagement of an organization

- Supported through local, city governments as well as foundations and corporate sponsors. This could look different based on location and the way the museum defines the scope of their community. Some potential considerations:

  » Needs within a large urban center, rural communities, and those in between

    ▪ Add case studies for these types of organizations who may have piloted these ideas

  » Access to funding sources through local companies, foundations, and national sponsors

- Consider hiring someone to sustain this work in an ongoing way; they should be involved in the implementation of the solutions and their subsequent evaluation

Section 4:

How is success defined and measured? What does it achieve in terms of mission and how will you know?

- The science center and the topics covered there become a part of the family's overall interests and identity

- Demographic shift in attendees who feel like they are reflected in the staff as well as the exhibits

  » Highlight local individuals who are successful in STEAM

- Philosophical shift in the way that the science center considers community engagement and issues of accessibility

- Value proposition for the community to participate in initiatives related to the science center is clear to all constituents

- Long-term and long-standing partnerships with educational and corporate partners

- Open-ended initiatives that can grow and be scaled to other organizations; flexible initiatives that respond to current needs of the community

Science Center "Wedding Planner"

(SCWP) Think like a Wedding Planner, NOT a Science Center!

| Ben Dickow | Paul Orselli | Ashanti Davis | John Falk |

Most science centers contain a wide range of expertise through staff and stakeholder abilities e.g.: marketing, design, finance, planning, project management, technology/IT, development…that would be beneficial to other organizations and groups. Science Centers can better utilize these assets and reframe their multiple internal skills and capacities to better serve communities that currently do not have strong connections to museums. The emphasis on this "Wedding Planner" mindset focuses on the needs of people and communities, not Science Centers, and creates opportunities to pull staff outside of their building. We want to engage with communities in ways that center their needs and desires.

To help Science Centers develop a Wedding Planner Mindset (WPM) we propose to develop a toolkit/resource guide to…. Identify the skills of staff and connected museum resources that are related to community aspirations. In this way, we will develop a menu that community leaders and affiliated groups can choose from. This will provide Science Centers opportunities to develop authentic partnerships with communities that may not normally engage with us.

This concept does not eliminate the use of our museum buildings. Instead, it decentralizes our buildings in an effort to expand our efforts outward to encompass the importance of our communities, their needs, goals, and aspirations which may not be tied immediately to our physical space or the traditional products and services that are building-centric. How can we turn our traditional relationships with museum buildings "inside out"?

Impact: Allows the Science center to know what assets it has that can contribute to a broad range of community needs not directly connected to STEM.

Target Audience:

Community Leaders, Community Members

How does this serve…

- Personal Identity and Fulfillment, (To be unpacked)
- Intellectual Exploration and Empowerment, (To be unpacked)
- Social Connection and Cohesion, (To be unpacked)
- Physical Security and Well-being, (To be unpacked)
- For each of the areas above, we recommend listening sessions be organized with the communities around the Science Center to better understand community needs, goals, and aspirations.

Monetization:

- Communities and organizations will pay for support that achieves their goals.
- Costs can be set by the value of the "product" at the time and change over time as values increase. (wedding planner example)
- Costs and benefits of the "products" will not be immediately apparent.

How is Success Measured:

- Are communities reaching out to you to participate in "wedding planning" to leverage other things that the institution does?
- It is not sufficient to rely on increased museum attendance and "everyone is having a good time"
- Broadening Relationships with the community.
  » Quantify the number of relationships.
  » How many people do we impact in quantitative and qualitative ways?

"Mindset" Challenges to Implementations:

- "More is More" Mindset. We default to our thinking within white supremacy culture to rely on the notion that more people through our doors is of higher value than a smaller group engaging with us repeatedly.

- Missions Mindset
  - » Our missions do not always call for fostering ties within our communities.
  - » Missions can become barriers to innovation if they only emphasize content and do not also include a charge to engage communities or highlight the underlying social benefit of what museums do.

- Organizational Mindset
  - » This may require re-thinking our work and the inclusion of community work in job descriptions.

- Organizational Mindset
  - » Costs and benefits of the "products" will not be immediately apparent.
  - » How is "value" determined -- by both the Science Center and the Communities?

Eating Our Way Into the Future

| Diane Miller | Barry Van Deman |

Section 1:

What is the basic outline of this approach? How is it novel? How does it connect to the larger communities aspirations for well-being — specifically, how does it support one or more of the 4 basic needs (Personal Identity and Fulfillment, Intellectual Exploration and Empowerment, Social Connection and Cohesion)?

When families, friends, or guests gather around a table to share a meal, they do more than eat, they have conversations. Science centers that wish to engage more broadly with and across communities might consider starting with food.

We all need to eat. Our physical wellbeing depends on the energy we derive from food, but our choices of food to eat are many—some foods enhancing our wellbeing and some damaging to our wellbeing. We often come together around food for celebrations. Our choices differ across cultures and communities, and while foods are available from around the world, we are limited by income and where we live.

Unless limited to choice, we do not eat the same thing every day or at every meal. We taste new foods, choose new menu items, experiment with recipes, and grow food in our gardens. We come together with family and friends to share a meal. We satisfy our hunger, employ our creativity, enjoy social connections, and explore new, healthier lifestyles. Our allergies and diseases influence the choices we make.

Science museums are unlikely places to seek these common human experiences around food, but they are places where people can come together for novel experiences with food, healthy eating, and the science of food and cooking. Food can provide the bridge to

bring communities together, from sharing traditions family recipes, and chiefs. Viewpoints from, doctors, the science of food to understanding energy to exploring climate change can all be explored around the topic of food. Food is necessary for all living things. It can be used to start a conversation and build relationships across communities and cultures.

Section 2:

Describe how this idea would work or function in the science museum.

- Food as a big, overarching idea, can take many forms within a museum setting. Among them:

- Create a makerspace for food. Install kitchen equipment so that a variety of experiences can occur: demonstrations by master chefs, the science of cooking by museum staff and volunteers, cooking experiments by participants, and video productions for online programming. Explore foods and medicinal foods across cultures. Invite storytelling by participants.

- Create an outdoor demonstration kitchen. Install grills and stone ovens to engage people in experiences. Engage people in cooking over campfires.

- Convene people around shared food experiences (does not require a dedicated space with equipment): herbs and spices, diets, fermentation, fruits and vegetables, dough, beer, wine, junk food, etc.

- Engage people in gardening and the related (and abundant) science content (indoors as well as outdoors). Harvest the gardens for shared experiences.

- Have people submit family recipes and share traditions around food.
- Convene people to present Science Cafes on a wide variety of topics, such as food taboos, nutrition, how we get energy from food, the impact of farms on water use and climate change and other topics of interest in an area.

Section 3:

How does this idea support the long-term sustainability of the museum? How is it funded?

First and foremost, food as an organizing idea generates interest among new audiences, especially those underrepresented and not traditional museum audiences—a key factor in long-term sustainability.

Programs and events can be funded through existing models:

- Create fee-based events
- Offer sponsorship opportunities
- Engage members, adding value and encouraging member renewal
- Seek grant funding.

Section 4:

How is success defined and measured? What does it achieve in terms of mission and how will you know?

While not all science museums share a common mission, many of them state that they exist to reach broadly into communities. Success can be defined the engagement of new audiences, both in number and in the depth of experiences. Engagement around food and its many related topics creates a space for people from different backgrounds to get to know and understand each other. It also allows the public to co-create experiences at or with a museum.

Reimagine Science Museum Digital
"Not Another Website"

| Tara MacDougall | Tonya Matthews | Mark Walhimer | Darryl Williams | Latasha Wright |

"When asked, 31% of museums admitted they had no digital strategy..."

"We are in a community each time we find a place where we belong."

KEYWORDS:

Future of Science Museums, Science Museum Funding, Digital STEM/STEAM, Digital Science Museums, Science Museum Digital Memberships

What is Reimagine?

Reimagine (working title) is an online digital science platform;

1. That steps outside of existing paradigms and creates a digital space for science centers to develop something new that serves our missions and meets people where they are;

2. Rebalances the inequities of all community member participation;

3. A monetization and fundraising platform the creates opportunities for museums and community members as content producers (co-production companies).

The regular science museum business model is built on in-person visitation. Everything flows from the in-person visitation. Websites are built to drive people to the in-person experience; grants / unearned income is based on in-person visitation. The idea of Reimagine is to flip the business model to be based on digital visitation, with in-person visitation designed to drive online use. The business model now becomes inclusive.

In a nutshell, Reimagine is an on-demand subscription-based digital content platform that drives people to science museums. It has a complex program, and it involves the following:

• A strategic plan for all science museums.

• A methodology to increase science museum DEAI.

• A unifying concept for science museums.

• A platform for science content.

• A fundraising platform.

Though there are approximately 350 science museums in the United States, there is no clear, comprehensive vision for how these museums serve the public. There is also a lack of sufficient reliable funding and a failure to present consistent reasons why policymakers and donors should contribute to science museum funding.

Another important fact is that museums are the most trusted source for information in the United States. Therefore, museums need to continue promoting high-quality science content. In addition, over 850 million people visit museums every year, more than all sporting events combined. Those two statistics, indicating the trust and the breadth of reach, uniquely position museums for funding and content creation.

There has been a visible decline in STEM knowledge among people, especially youth and adolescents, both in the USA and other countries. A team of researchers launched a synergies project to help overcome this issue. In this longitudinal study, young adolescents were investigated to observe their increasing or decreasing interest in STEM learning. They found out that youth with an age range of 10 to 12 years have some interest in various dimensions. However, they are not active enough to participate in various STEM activities and exhibitions. Science was seen as the most interesting dimension among the participants. The research is considered a pathway for more considerations for STEM learning (in-person and online) among people in the future.

Another research project was conducted by Shaby, Staus, Dierking, and Falk (2021) to observe the constituents that lead to a decrease or increase in STEM knowledge among the youth with limited or no resources. The resources available in the STEM learning ecosystem, and the way the youth with interest in STEM perceive them, are the most important in learning. To navigate the ecosystem around them, participants were observed dependent upon the factors like the availability of resources related to their interest and emotional and financial support from the people around

them. These factors have a relatively more significant impact on developing interest in STEM learning.

Despite popular beliefs, the truth is that ninety-five percent of learning happens outside the classroom. The shift to a digital-first strategy for science museums will move science education beyond the classroom, creating lifelong experiences. It will also give underserved members of the national (and global) community access to science-related content. As a result, science museums need to rethink how they conceptualize "community;" to view community as any place where people feel they belong, including but not limited to the physical location. Reimagine creates digital spaces that facilitate the four factors of well-being as described by John Falk.

The four benefits/outcome areas:

1. **Personal Connections** – catalyzing wonder, interest, and a sense of identity with STEM; feelings that foster a sense of belonging and long-term engagement;

2. **Intellectual Empowerment** – facilitating STEM-related curiosity and learning, and the ability to utilize STEM in the service of solving societal challenges;

3. **Social Cohesion** – making it possible for all sectors of society to experience STEM learning as a natural and integral part of their family, group, and community's heritage and life experience;

4. **Physical Security** – ensuring that all users have opportunities to gather (physically or virtually), interact, explore and learn within a safe, healthy, anxiety-free, and restorative environment.

A conference paper by Ludden and Russick (2020) discussed the process of transforming the museums into digital platforms, like all other institutions in the US. The authors stressed the number of museums that have not implemented such strategies that enhance their digital transformation to attract more audiences. They affirmed that the audience should be prioritized first to have an effective user experience (UX). For any institution to become digital-first, a more dynamic and systematic approach is required that involves collaboration from each side. Innovation and digital transformation always work parallel as the leading resource of the museum's audiences.

Reimagine Five-Year Strategic Plan

1. Proof of concept case study

2. Adopt a Reimagine strategy for Science Museums of the United States.

3. Create a unified advertising campaign for approximately 350 science museums in the United States.

4. Develop a countrywide funding model with online science programming.

5. Develop a national website for science museum digital memberships.

6. Monitor the success through KPIs and metrics.

Benchmarks:

Master Class - $800M valuation
In 2017, a source reported that Master Class teachers get at least $100,000 per course plus a 30% revenue cut.
https://www.masterclass.com/

Crash Course / PBS - PBS expands Crash Course
https://www.youtube.com/user/crashcourse
https://thecrashcourse.com/about
https://www.patreon.com/crashcourse
(estimated $29,000 per month)

CS50 - David Malan
https://cs50.harvard.edu/college/2021/spring/

Engaging Staff as Stakeholders

| Laahiri Chalasani | Rabiah Mayas | Tom Owen | Lynn Dierking | Ray Vandiver |

The basic concept and its intended outcomes/ impacts, what are the basic outlines of the approach?

We are proposing a comprehensive approach to staff learning, development, and community that aims to build awareness, skills, and professional capacity to support transformative, equitable science museums. The project aims to provide a set of tools, processes, and institutional practices for assessing a science museum's current state of: staff culture and experience, engagement with staff as key museum stakeholders with unique assets and perspectives, and the co-creation of pathways for sustained shared learning, cross-disciplinary work, leadership development, and commitment to equity.

This effort will provide an overall backbone for an iterative and structured action planning process, to include:

- Foundation of institutional questions and goals to guide the work
- Guidance and effective practices for attending to institutional issues of power and equity – positional, racial, ethnic, gender, socioeconomic, educational
- Tools for individual and team-based assessment, discussion and reflection at all stages of action planning
- Frameworks and models for professional learning (PL) experiences

- Rubric templates for establishing metrics and evaluating progress toward them

At the core of this effort is the belief that staff are the most valuable resource within a science museum - far more important than artifacts, exhibitions, or programming. Deep, asset-based, and sustained investment in staff vs. the "stuff" of a museum is critical to the future of museums as relevant institutions to visit/ use, learn from, and work within.

Connection to community aspirations, specifically which of the 4 basic needs science museums support will be served and how?

- Personal Identity and Fulfillment
  - » Develop a framework for staff to explore their own ties to STEM and their communities encourages them to share that with visitors/users
  - » Establish Reciprocal relationships between staff and the institution through increased investment in staff + increased expectations of staff
- Intellectual Exploration and Empowerment
  - » Vet ideas and build staff ownership
  - » Create opportunities for staff to understand others' roles
    - ▪ Mentorship (ongoing)

    - ▪ Job shadowing (episodic)
    - ▪ "A day in the life of"
- Social Connection and Cohesion
  - » Support staff as liaison to various communities/ demographic populations
  - » Establish and maintain strong culture
  - » Develop processes for soliciting staff input, concerns, feedback
- Physical Security and Well-Being
  - » Build trust and passion connected create lasting community
  - » Recruit, hire, and onboard

Target audience, e.g., what segment of the community is being served

The proposed work will involve and support staff across role types, departments, and levels of institutional hierarchy. While frontline staff and junior-level staff are often considered the beneficiaries of - and not contributors to (PL) of the organization, this approach takes an asset-based approach to engaging more junior staff. Concurrently, this project will serve the gaps and opportunities of more senior and privileged staff, seeking to address institutional norms and power dynamics that can prevent meaningful change.

How is success defined and measured, what does it achieve in terms of mission and how will you know?

Staff will:

- Demonstrate stronger, higher quality performance (Evidence from visitors/users through comments on staff quality at all levels and repeat visitation/use)
- Work at the museum for more time (Evidence at all levels of less staff turnover and job satisfaction)
- Become stronger advocates/ambassadors for the museum's mission and work (Evidence of more partnerships that improve the museum's relationship with the broader community)
- Develop skills in _____
- Feel more connected to the museum and remain an ambassador - even after they leave the institution
- Feel more safe/secure in _____

The museum can/will:

- More deeply reflect and prioritize the needs, values, and assets of its communities (Evidence of a more diverse and satisfied staff and Board)
- Better support engagement and participation of all members of the community (Evidence of more diverse and satisfied visitors/users)
- Design pathways for building leaders from within (Evidence of upward mobility and leadership from within)
- Elevate/recognize/acknowledge the value and professionalization of all museum roles within the industry (e.g. facilities, project management) (Evidence of a more diverse and satisfied staff with less turnover)
- Build novel relationships with its communities (Evidence of unique partnerships addressing community needs in novel and effective ways)
- Establish new systems to consider and include all types and levels of staff in museum decisions and practices (e.g. including floor-based staff in decisions about safety in the building) (Evidence of a more engaged and satisfied staff with less turnover)

Funding and/or revenue opportunity, e.g., how will this effort be supported?

Long-term cost savings:

- Better employee retention
- Higher productivity
- Ability to market a "new" experience programmatically rather than through capital intensive exhibitions.

Revenue:

- Foster sponsorship or philanthropy toward improved visitor/user experiences and/or toward investment in diversity of staff.
- Increase ticket sales/membership sales due to refreshed visitor/user experiences via programs overlaid onto existing assets/facilities
- Invest in staff to think like entrepreneurs and identify revenue opportunities
- Leverage science communications and science education expertise internally that can be marketed to hospitals, businesses, or other non-profits, as well as schools.

Challenges, what are likely to be impediments to implementation?

- Leadership/board/senior staff buy-in and participation
- Time to implement PL; especially as museums open to public with fewer staff
- Assessment of staff before/after PL - can be challenging to ensure approaches are vetted, appropriate, etc. but we do not want this to be too challenging for smaller museums.
  - » Consider multiple, creative ways to get input and feedback, including fewer questions, conversations, more open-ended approaches
  - » Thermometer process, in which staff can track satisfaction and perspectives on issues over time.
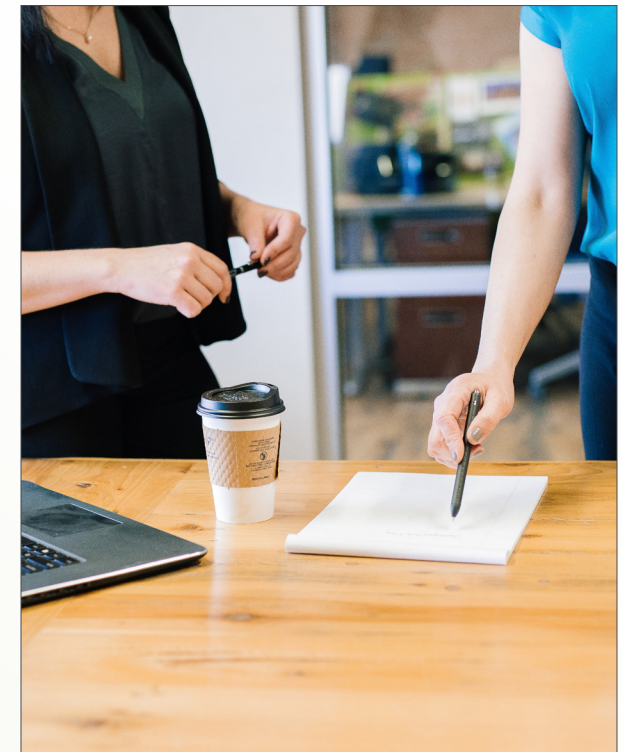
Building a Diverse Workforce

| Preeti Gupta | Jennifer Jovanovic | Tifferney White |

BIG IDEA:

Build a diverse science museum workforce that reflects the socioeconomic and racial diversity of its city

Rationale:

- In order for science museums to move towards becoming organizations that sincerely are working towards equity, access and inclusion, they must position diverse perspectives, life histories, and standpoints to contribute to all aspects of museum work and products.

- To become an organization that is for the community, science museums must be accessible and welcoming to their city's diverse communities. Staff representation is one clear way to demonstrate that the organization is representative of that community.

With the high-level goal of diversifying the museum workforce, we propose an initiative that tackles the following issues:

- Exposure to careers in museums
- Support and mentoring for people to persist with careers in museums
- Support for museum leadership to use strategies that create welcoming, safe and fair practices to support exposure and persistence
- Support for HR departments to recruit, hire and create environments for keeping BIPOC staff at their museum and to advertise that there are jobs for different talents (writing, artists, etc.).

- For smaller organizations that don't have HR departments, supporting the leadership of the organization to feel prepared to enact this important HR work.

The initiative tackles the issues at three levels simultaneously:

- Attracting youth
- Attracting emerging professionals
- Attracting professionals who are in other industries

Overview of how our idea will be implemented:

Logistics:

1. We begin with a planning grant for a group that includes BIPOC innovators from outside the museum world who have experience in successfully attracting and retaining a diverse workforce during tight financial times.

2. In the second year, based on this knowledge, we build a network led by 3-5 museums that serve as hubs, with a larger group (10-15) that connects with those hubs. A research agenda accompanies the whole project to track success towards outcomes. Each museum commits to tackling 1, 2 or 3 of the issues below.

For attracting youth:

- Scaffolded and supportive ways to work in museums in part-time jobs, with deep curriculum that: (1) teaches about museums as a field, and (2) explicitly talks about the kinds of systemic racism that exist in museums historically and currently, with the understanding that the future workforce is about social justice work

- Supported and systematic rotations through different museum departments

For attracting emerging professionals:

- Paid fellowships to learn to work in museums in education, exhibits, grants, and other departments, using a training/apprenticeship model with a structured curriculum and actual time doing authentic work in museums

- Structured mentor-mentee relationships in place with external mentors

Attracting professionals who are in other industries:

- In museums, there is often a racial divide where frontline non-education staff are BIPOC and behind-the-wall office people are those that identify as White. When hiring for those jobs, develop and implement a set of strategies that expose professionals in other industries and who are BIPOC to know about these jobs and learn about the culture of the institution to encourage applications.

A set of guidelines and tools for museum leadership:

- Includes specific strategies for community building, recruitment, onboarding, keeping and promoting BIPOC staff

Overview of how our idea will be financed and become sustainable:

This initiative includes a planning grant, followed by start-up funding, suggested for the first 2-3 years, to develop the four strategies above; however, the purpose of the initiative is to integrate these strategies within the day-to-day operation of the museum, so that no additional funding is required. It's about a change in how we do business, not a special grant or program.

Overview of how we will know if our idea is successful:

We will be successful if:

- *We see an increase in the number of BIPOC people on the museum staff, at all levels. All participants need to keep this front and center throughout the project. We need to see results.*

- BIPOC staff are comfortable asking for help and know who their mentors are

- Mentors are involved in the program from all across the country

- Museum leadership and HR are committed to the initiative and can clearly explain its purpose and why they support it; the initiative has a well-known mission statement

Youth

- They have developed an awareness of museum careers, and have interest in pursuing potential careers

Emerging Professionals

- They have applied for positions in museums or museum-like settings

Professionals in Other Industries

- There is a change in demographics in the jobs most often occupied by people who identify as White

Museum Leadership

- New strategies are established and being used on an ongoing basis

Community Culture Centers

| Tasmyn Front | Monae Verbeke | Charlie Walter |

The Community Culture Center concept would be a physical place located in various communities that is a collaboration between small/mid-size museums, libraries, and other organizations that would provide educational, recreational, social, and cultural services for all people in the community. In addition to meeting general well-being of a community, Specific learning goals could include improvement in technological fluency, an increase in confidence and understanding of STEM content, and an increase in the 21st Century Learning goals of creativity, collaboration, critical thinking, and communication.

The possible benefits to schools and communities from a well-designed and carefully implemented community education program have been described in a variety of studies, including the U.S. Department of Education's Strong Families, Strong Schools (1994) and Safe and Smart, from the U.S. Departments of Education and Justice (1998). Documented improvements include a better school learning climate, reduced violence and vandalism, more efficient energy use, increased family involvement, and broadened community-wide educational opportunities. Other studies show improved institutional responsiveness to the needs of parents and community members and increased public support for schools and other public agencies.

Funding

- Planning grant from NSF would be awarded to communities to develop structure, relationships, funding, strategic planning, etc. that could include any number of institutions/organizations that would provide services and experiences

Structure

- Overall structure would consist of the following:
  - » Lead institutions would be the science museums
  - » Library
  - » School/school district(s)
  - » Other partners could include: community college, university, Boys & girls club, community center, Charter school, Head Start, Food Bank, Community Gardens, vocational training center, tutoring, maker spaces, Oasis, early childhood, vocational, etc.
- Hours would serve the community
- Strong virtual component would be integrated into the program
- Look to pre-existing large-scale collaborations, such as the STEM Ecosystem to provide models for rolling out nationally (annual conferences to share best practices, etc.)
- Community residents would be involved in assessing community needs and interests
- Located near residents' homes to increase participation and sense of belonging

- Community resources and volunteers would be used to expand curricular options, conduct field trips, offer various kinds of tutoring, sponsor student-based enterprises, and support experiential learning
- Additional partnerships would be developed between schools and public and private service providers, business and industry, and civic and social service organizations for programs such as after-school programs, drug education, literacy and remedial programs, internships and work-study programs, and career awareness activities
- Lifelong learning programs: extended-day and enrichment programs for school-age children, adult education, vocational training and retraining programs, leisure activities, and intergenerational programs. The Center would serve all ages and populations that would encourage disparate elements of the community to come together to work toward common goals.

Models (links)

Culture House

Tulsa Children's Museum STEM Center - the Discovery Lab: https://discoverylab.org/

STEM Ecosystem

https://education.stateuniversity.com/pages/1874/Community-Education.html

https://www.nccs.org/

Science-Interest Revolution

| Jayme Cellitioci | Christian Greer | Dennis Schatz | Sharon Klotz |

This is your invitation to a **Science-Interest Revolution**.

A key element of this revolution is to identify, develop, and catalyze the science version of *Reading is Fundamental*. We want the message to "Do Science with Your Child Every Day" to be as prolific (and clear) as "Read to Your Child Every Day." Imagine families engaged in science-based activities in the kitchen, in the car, at the park—anywhere / everywhere— discussing science topics around the dinner table along with the latest baseball scores and going first to the science section at the library on their next visit.

1. In envisioning the "science version" of *Reading is Fundamental*, we hope to convey the concept of an accessible, ubiquitous, community-embedded level of science awareness that reflects (and will also drive) the increasing value of science within our larger cultural structures.

2. Traditional hands-on science-type activities (e.g., making connections between baking in the home and chemistry) may be starting points of success, but we envision moving beyond the traditional tropes of science / STEM-based family activities to also include unexpected everyday contexts: sports, music, theater, games/gaming, fashion, DIY/maker/hacker culture, etc. In the same way that reading is domain-independent, so, too, science interest and science literacy embrace all disciplines and subjects.

3. In the context of this idea, "science interest" may best be understood instead as "walking with wonder" or seeing the world through the lens of curiosity and inquiry. Dismantling traditional connotations around the word "science" and around who arbitrates what science looks like is at the heart of our vision. We welcome parents, grandparents, caregivers, siblings, civic leaders, and everyone into this space of conveying and catalyzing wonder for all, and we envision creating a set of toolkits, guiding principles, and examples for spark-ing and sustaining interest in and passion for science.

4. *Reading is Fundamental*'s equation for success includes books of course, but, actually, the true multiplier is the relationship developed through shared reading. Similarly, the engine for a science interest revolution lies within our everyday, intimate family and community relationships where we've made space for inquiry, curiosity, and wonder. If we can equip and empower adults to "do" and discuss science anywhere and everywhere, we can get the flywheel spinning.

5. Science interest isn't predicated on knowing. This is a critical axiom, because, for many people, the notion that science *equals* science content is a deterrent and roadblock. Instead, we're interested in both celebrating and normalizing science process, inquiry, and the way of wonder. This view expands the portal of entry, eliminates the cost of "failure," and rewards self-reinforcing relevance.

This initiative will require the support of a wide variety of collaborators, including caregivers, community-based organizations, funders, government agencies, etc. We need to ask ourselves how we might catalyze this initiative by exploring the needs and interests of individuals and communities, as well as reflecting on the uses of science-based spaces and places. In its purest essence, we are asking, "What does a science interest revolution look like?" "And where, when, and how can we get started, so that science and science learning is

as ubiquitous throughout society as sports?"

Before you RSVP for this revolution, let us share what has led us to this moment. Everywhere we look, there are events taking place—from natural phenomena to social phenomena—that reveal this pivotal moment's unique wants, needs, gaps, and opportunities. As science learning professionals, we look at these elements through our diffraction goggles— seeing ourselves, our field, and the content that fuels us, prismatically reflecting a thousand insights back to us. As we look for solutions to the world's challenges that fall within our domain (e.g., viruses, wildfires, species extinction), we engage in the dynamic balance of Creative Problem Solving (through divergence and convergence). We strive to identify the non-obvious, novel, and useful solutions to challenges for which we believe our platform is well-suited. Or *could* be well-suited. However, too often we are limited by our own narrow view that makes our institutions relevant and successful.

Here is the uncomfortable part. And it is not that different from the ambiguous pursuit in a classroom or program space, where you are trying to identify the phenomena that is specifically relevant and meaningful to those specific students or participants. There can be fits and starts; there is a surrendering; and ultimately, it is all an experiment. This is exactly what science centers and science-based organizations are being asked to do: get vulnerable, embrace ambiguity AND the moment, and...eek—question their relevance. The revolution date has been set, and the response time is now.

But, let's deflate the low-floating (biodegradable) balloon here so that we can *really* get ready for the party. The question is not so much about whether or not physical science settings are relevant now or will be relevant in the future. It is about how decentralizing science learning, and providing more real-world, ubiquitous science learning experiences, can in turn inform and enhance the relevance, meaning, and experiences of the physical spaces and places—and thereby, the people who use them. It is about digging deep for the *WHY* around raising STEM interest and literacy, taking the Maslow-identified needs into deep consideration.

While we often discuss raising science literacy, we must invest our energy in raising science interest and awareness. We need strategies that will help us engage the science "unaware," those for whom science is not top of mind. We are looking forward to transforming this through a Science-Interest Revolution that is fueled by an unwavering commitment to relevance and impact.

What might this look like?

- A "How To Science" program series for parents and caregivers
- A deck of "Wonder" cards to spark inquiry-infused conversations and activities at home
- A science version of "Sesame Street"
- "Curiosity Camp" summer intensive to reinforce science-infused habits of minds
- "Science Everywhere" performance art in the style and spirit of Improv Everywhere
- What ideas do YOU want to add to this list?

Financing & Sustainability

- Benchmark *Reading is Fundamental* financial model
- Private sponsorship, not fee-based for user

Implementation

A driving organization (could even be a start-up), or core team, that believes in the effort and champions it

Conduct a research study on what is needed to make a start-up organization or initiative of this nature successful (e.g., STEM Learning Ecosystems; ASTC, NSTA, and PTA at their formative points; 100K in 10)

Identify people's starting point with "science"

Connect with *Reading is Fundamental* leadership

Define vision, mission, and key partners

Catalyze a network of science-based organizations and initiatives that will implement

- Define measures of success, evaluate, iterate
- How does this concept merge / synthesize with other concepts and ideas from the Museum Futures Project? What might some of the nodes be (e.g., considering this initiative in light of creating a digital strategy; digital allows us to transcend place and space and should be considered in light of making science ubiquitous)

Assessment

- Qualitative and quantitative evaluation (to demonstrate impact and justify ongoing support and implementation)
- Transformation indicators of partners' organizations, sites, programs, and initiatives
- Interest level in science increases; relevance of experiences, programs, and initiatives increases

Billion Dollars for Free-Choice Learning

| Charlie Walter | John Falk |

THE BIG IDEA:

Just as state and federal governments provide funding for NGOs for critical services such as mental health care or housing for the needy, funding should be made available for organizations that provide free-choice learning opportunities in underserved communities. Research clearly shows that most learning in our lifetimes happens outside of school. In fact, only 5% of a person's waking life is spent in a formal school classroom. The free-choice learning community, which includes museums, zoos, nature centers, libraries, 4-H Clubs, and botanic gardens, is a 24/7 resource that can be mobilized in a new way to support lifelong learning for all U.S. citizens.

But the free-choice community is a disparate community. Its diversity is both its strength and a weakness. This initiative seeks to develop a coalition of free-choice learning institutions in each of our fifty states to leverage new funding, develop new learning infrastructures, and ultimately create a more literate and active citizenry needed to face the challenges of our fast-changing world.

How the Idea will be Implemented

Federal, state, and local governments spend $720.9 billion [each year] ...to fund K-12 public education[1]. The focus of this project will be to develop a new line item in each state's budget to support free-choice learning. Initial steps will include developing a Compelling Case grounded in current research and a State Funding Strategy to secure $1B in funding across all fifty states.

Two Teams will be recruited. Team One will develop a Compelling Case showing the efficacy of Free-Choice STEM Learning. This case will be grounded in current research and will specifically address issues such as the importance of Free-Choice Learning in STEM Literacy, Early Learning (years 0-4), the Arts, and Workforce Development. The audience for this research will be State Legislators.

Team Two will develop a State Funding Strategy, i.e., how to engage the broad free-choice learning community and build a strong coalition in each state, how to develop legislative support, how to decide on a targeted funding request, and how to find appropriate state conduits for implementing funding. A national learning community should be developed to share successful strategies across each state.

How the idea will become sustainable

The purpose of this initiative is to develop support for Free-Choice learning and to place a recurring line item in each state's budget for this. Utah already has this in place with its "$5M Informal Science Education Enhancement". The goal is to have a line item in all 50 states. Once this fund is established, a free-choice learning institution can apply to this fund to develop programs in their community. Programs should emphasize reaching underserved populations.

How this idea will be assessed

At one level, the number of states that develop a new line item in their budget for free-choice learning programs will be a measure of success. At a more granular level, the number of individuals reached through new free-choice learning programs and evaluation data on cognitive and affective gains will show the value of these programs. But more than data, images and testimonials from individuals who were impacted by these programs will be needed to provide powerful stories to keep state legislators engaged.

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1 https://educationdata.org/public-education-spending-statistics

End Notes

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