



Museum Grants for African American History and Culture

Sample Application MH-00-14-0023-14

Museum of African American History

Amount awarded by IMLS:	\$150,000
Amount of cost share:	\$177,103

Attached are the following components excerpted from the original application.

- Abstract
- Narrative
- Schedule of Completion

Abstract: IMLS Museum Grants for African American History and Culture
Charles H. Wright Museum of African American History

The Charles H. Wright Museum of African American History seeks support to enhance its staff capacity, train its current educational staff in STEM (science, technology, engineering, and mathematics) education delivery, and to increase its ability to fully implement its newly opened permanent exhibition, *Inspiring Minds: African Americans in Science and Technology* as part of its overall efforts to provide excellent service to children of greater Detroit. The Museum's primary funder, the City of Detroit, has had to reduce support by over 1 million dollars. In addition, separate City funds allocated for the STEM project has been reduced by over \$250,000, leaving the Museum unable to add necessary staffing or train current staff in STEM education delivery. As a result of dramatic public and corporate funding reductions in recent years, the Museum was forced to reduce its staff by nearly 50%, affectively hampering staffing capabilities to fully deliver STEM experiences with the new exhibit. The Museum seeks to supplement its budget with IMLS grant funds matched by corporate and individual giving. As the Museum has primarily been an institution of history, arts, culture, and community engagement, professional development of our educators in STEM delivery is critical in addressing short and long-term community needs. The project is a major pillar in the Museum's efforts to better connect with children and families, while solidifying its educational capacity.

Detroit Public Schools serve significant African-American populations but does not have the infrastructure, expertise, or flexibility to overcome the historic exclusion of, and self-limitation by, minorities and women from pursuing STEM careers. Nationally, African-Americans receive merely 4% of advanced STEM degrees, but Detroit students face much bleaker projections as proficiency decays to merely 11% by the 11th grade. To address this, the Museum has taken full weight of the U.S. President's Council of Advisors on Science and Technology recommendation for increased *informal learning* spaces that bridge cultural identity and STEM fields (2010). *Inspiring Minds: African Americans in Science and Technology*, introduces the significant history of African-American STEM contributions in order to grow interest in these fields and build the confidence to pursue them. Informal learning spaces are museums' greatest assets in generating experiences that allow individuals to engage with concepts at their own pace without a prohibitive concern of potential failure. Re-staffing for this purpose, along with the training of current Museum educators, is necessary to provide meaningful informal learning, classroom supplements, and maximization of its new exhibition in order to motivate and prepare local youth and families for the rigors of the 21st century economy.

Over the duration of the grant period the project results in: (1) hiring of a full-time STEM educator to coordinate efforts, (2) hiring of a training facilitator, (3) the creation of a STEM specific branch of our internship program, and (4) training of current educators for STEM delivery and observational analysis of student engagement. The project shall be directly accountable to both the Museum's President and Vice-President of Exhibitions and Education.

Success of the project will be judged by its ability to (1) increase overall attendance, (2) increase direct STEM relationships with Detroit Public Schools, (3) yield long-term training procedures and manuals for docents working with this facility, and (4) increase educational staff capacity.

The Charles H. Wright Museum of African American History
Request to IMLS Museum Grants for African American History and Culture
December 1, 2013

1.0 PROJECT JUSTIFICATION

1.1 Project Purpose - The Charles H. Wright Museum of African American History seeks a two-year grant of \$150,000 in IMLS support to be matched by \$177,103 to enhance its staff capacity, train its current educational staff in STEM (science, technology, engineering, and mathematics) education delivery, and to increase its ability to fully implement its newly opened permanent exhibition, *Inspiring Minds: African Americans in Science and Technology*. This is an important part of Museum efforts to provide excellent service to children and families of greater Detroit. The overall project has been a multiyear effort, in alignment with the U.S. President's Council of Advisors on Science and Technology's call for increased *informal learning* spaces that bridge cultural identity and STEM fields (2010). The Museum seeks to supplement this budget with IMLS grant funds matched by corporate and individual giving. As the Museum has primarily been an institution of history, arts, culture, and community engagement, professional development of our educators in STEM delivery is critical in addressing short and long-term community needs. This initiative comports with the Museum's strategic planning calls for increased staff capacity and widespread expansion and integration of our STEM opportunities for youth, families, and schools.

1.2 Statements of Need –

Minority Pathways to STEM learning: Despite being a historical leader in STEM, the U.S. faces a deficit in the development of STEM professionals, a vital need in its economic recovery and global competitiveness. By 2018, 92% of STEM jobs will require some post-secondary training, but even of proficient students 75% of them divert from these fields, which places importance on motivating K-12 students to pursue them.¹ Equally worrisome, STEM fields lack diversity locking African-Americans out of the largest growing sectors of quality paying jobs, in turn hampering critical diverse experiences within scientific discovery as a whole. Nationally, African Americans receive merely 4% of advanced STEM degrees, but Detroit students face much bleaker projections as proficiency decays to merely 11% by the 11th grade. Without raising interest levels and connecting the predominantly minority students of Detroit with the historic accomplishments of African-Americans in these fields, perceptions of minority exclusion from STEM will persist leaving an entire generation behind.² Now is a critical time to create stimulating experiences for these students in effort to inspire lifelong STEM learning as upward mobility for African American youth is eroding.³

Institutional Strength: Due to ubiquitous economic downturn, especially in the U.S. automotive sector (historically a major part of the Museum's corporate support), the Museum has experienced significant reductions in contributions to its general operation funds. Additionally, the Museum's primary funder, the City of Detroit, has had to reduce support by over 1 million dollars. Further, separate City funds allocated for the STEM project has been reduced by over \$250,000. The Museum, unwilling to abandon a project of significant community need, garnered individual donations in order to complete the design, fabrication, and installation of the permanent facility. Consequently, the Museum was forced to reduce its staff by 50%, hampering capabilities to fully develop and deliver STEM experiences with the new exhibit. Addressing STEM staffing is necessary to provide sufficient informal learning, classroom supplements, and public programming in order to motivate and prepare local youth and families for the rigors of the 21st century economy while simultaneously increasing our

¹ Anthony P. Carvenale, Nicole Smith, and Michelle Melton, "STEM," Center for Education and the Workforce and Georgetown University, October 2011. <http://cew.georgetown.edu/STEM>

² Kareen Malone and Gilda Barabino, "Narrations of Race in STEM Research: Identity Formation and Discontents" Wiley InterScience, September, 2008

³ Annie E. Casey Foundation, "Promoting Opportunity for the Next Generation" Kids Count Data Book, 2010

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overall attendance.⁴ While the Wright Museum's *Inspiring Minds* exhibition, developed with the support of the Department of Education, is truly the *only of its kind and depth in the nation* (see: attached facility description), and has the potential to be an impactful representative model for Detroit-area children, staff development is needed to maximize its impact. The project is a major pillar in the Museum's strategic plan's call to better connect with children and families on long-term community needs. Professional development makes this exhibition a more complete product capable of reaching its larger goals. Additionally, the inclusion of an internship component, that promotes minority educators, directly contributes to the formation of pipelines to STEM careers for persons of color, while functioning as representative motivator for young students to witness. Finally, this effort contributes to addressing the significant shortage of young and minority museum professionals by attracting and developing cohorts of Millennials (born after 1980) through creating achievement programs which overcome the perception that museum work lacks wages and significant community impact opportunities.⁵ This project maximizes our institutional capacity to effectively carry out critical educational services to our largest and growing constituencies while recruiting and training the museum professionals of tomorrow.

1.3 Project Significance and Community Input -Detroit school systems serve approx. 70,000 students(the vast majority being African American 1/4 of Detroit's total population), 1/10th of Detroit's population, but does not have the infrastructure, expertise, or flexibility to overcome the historic exclusion of, and self-limitation by, minorities and women from pursuing STEM careers. Michigan youths are amongst the worst rates of those affected by home foreclosures⁶ creating a substantial pool of children which must overcome the significant negative developmental effects found among those with even brief experiences with poverty.⁷ These students find little STEM inspiration at school as underserved schools are unable to move away from text focused, test driven, science education⁸, leaving museums to fill the fundamental void by offering interactive, flexible, and open-ended informal learning environments favoring cultural and personal context learning over test based banking.⁹ During a two-year exhibition planning phase, the Museum established a committee that included teachers and educators of local K-12 schools, science educators from multiple Michigan Universities, and accomplished historians researching Black scientists to conduct focus groups with children of varying ages to better understand how to equip and theme the exhibit in a way that would best benefit local children. With a permanent exhibit introducing youth to the cultural significance of STEM achievements for African-Americans already in place, cultivating museum educators to deliver experiences that instill STEM interests in minority youth is a unique opportunity to offer real change.

1.4 Expected Project Results and Capacity Enhancement -

Over the two-year duration of the grant period the project results in: (1) hiring of a full-time STEM educator to coordinate efforts, (2) hiring of a training facilitator, (3) the creation of a STEM specific branch of our internship program, and (4) training of current educators and volunteers for cultural context based STEM

⁴ Center for the Future of Museums' study on demographic transformation for museums' indicates that 46% of the market will be minority based by 2025.

⁵ Adrienne Barnett, "Catch Them if You Can: Building Career Pathways for Millennials in Science Centers/Museums", John F. Kennedy University, Museum Studies Department, published thesis, 2011

⁶ Population Reference Bureau's Analysis of Mortgage Bankers Association National Delinquency Survey and the U.S. Census Bureau American Community Survey, 2009

⁷ Previously cited at 3

⁸ B. Bevan et al., "Making Science Matter: Collaborations Between Informal Science Education Organizations and Schools" Center for Advancement of Informal Science Education Inquiry Group Report, 2010

⁹ Philip Bell, Bruce Lewenstein, Andrew W. Shouse, and Michael A. Feder, National Research Council, Committee on Learning Science in Informal Environments, 2009

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delivery, and observational analysis of student engagement. The project shall be directly accountable to both the Museum's President and Vice-President of Exhibitions and Education, and external evaluation.

2.0 PROJECT WORK PLAN

2.1 Theory and Methodology - The Museum's methodology for this program adheres to the National Research Council's Committee on Learning Science in Informal Environments recommended framework to: (1) Provide excitement, interest and motivation, (2) promote understanding of core concepts, (3) explore and observe, (4) reflect and reinforce, (5) create opportunities for self-determined participation, and (6) discuss science in contexts of individual and communal identities (2009). The Museum also recognizes the value of creating aesthetically and historically rich experiences to pierce self-doubt and the widespread belief throughout underprivileged minority classrooms that long term success in science is not suited for individuals of these backgrounds.¹⁰ Developing personnel capable of reflecting these methods during the usage of the Museum's exhibit is a critical component in delivering a comprehensive product producing excellent results. Museum tours, classroom talks, and workshops are linked to the Michigan Department of Education's K-12 Curriculum and Standards in Science, Mathematics, Social Studies, English and Language Arts, Art History, World Languages, and other subjects. This project expands the number, skills, and knowledge of educators, thus positioning the Museum to better deliver interpretive tours of exhibitions, STEM educational and cultural education programs for the preK-12 community, workshops, seminars, and summer camps.

2.2 Project Activities, Implementation, and Sequencing –

The hiring of a full-time **Director of STEM Education** will enable development of content and programs across the sciences through a variety of educational and media platforms. The educator will be responsible for working in conjunction with Museum education and archivist staff in creating, guiding and implementing the Museum's family learning approach to the sciences in the rich context of African American history and culture. Responsibilities include:

- Develop, implement, document and, evaluate, dynamic interest building experiences in STEM disciplines
- Produce training programs for staff, interns, volunteers, and educators in STEM delivery to minority youth
- Expand existing, and foster new collaborations with University and leading science professional community partners
- Integrate use of technology benchmarks for field-trip curriculum, teacher performance, and family engagement via hands-on informal learning
- Presents science content to the general public, children and families, students and teachers in a variety of formats from stage presentations to workshops and professional development sessions.

The **Training Manager** is responsible for working with all Museum docents, educators, interns, and volunteers that interact with the exhibit and carry out related programming. Under the guidance of the curriculum and programming strategies articulated by the Director of STEM Education, the Training Manager will be responsible for creating workshop sessions to familiarize educators working with student groups how to best deliver experiences that adhere to cultural context learning. The Training Manager will coordinate continued development workshops on all technologies found within the exhibit. Bi-weekly sessions will allow for new

¹⁰ J. Shipley Newlin, "A Scientist for the Day: Exploration and Discovery in the Museum," ASTC Dimensions: September/October 2001 http://www.astc.org/pubs/dimensions/2001/sept-oct/scientist_day.htm

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staff and interns to gain updated training as well as problem solve tour concerns as they arise. Over the course of the grant period, the Training Manager will prepare a Senior Docent to serve as an internal Training Facilitator capable of acquiring these responsibilities long term.

The **Education Program Internship Corps (EPIC)** initiative is modeled after, and is partially supported by, the Museum’s successful Culture Corps internship program developed in 2009 with support from the JP Morgan Chase Foundation. EPIC interns will be recruited from local/regional, colleges and universities. The Museum will look to hire five (5) promising but underrepresented young people aspiring to STEM-related careers in museums, arts and culture organizations, K-12 education, and/or youth leadership. The Museum will look to fill two (2) full-time positions from these candidates in second year of the program. During the internship, EPIC interns will work and pursue personal/professional development training at the Museum. Each EPIC member will have a minimum of two significant professional development opportunities in Education and Exhibitions over the course of their appointment. These Museum STEM-Educator opportunities include:

- training as tour guides including minority mentoring towards STEM learning;
- developing exhibition handouts, continue research on Black scientists;
- preparing material for and conducting museum workshops;
- assisting with continued learning and mentoring programs; and
- Becoming STEM education training consultants.

Project Activities	Results Timeline
1. Hire one full-time Director of STEM Education and one Training Manager	October 2014
a. Work in conjunction with the Museum’s Director of Archives, and Special Projects Coordinator to develop STEM education products inclusive of cultural identity and State curriculum guidelines	➤ January 2015
b. Develop training materials and resources for museum staff, interns, tour guides, and educators	➤ May 2015
c. Develop program evaluation instruments and instrument administration protocols	➤ August 2015
2. Develop pre-tour and post-tour evaluations for targeted data from students, educators, and families	August 2015
a. Qualitative measures	
b. Quantitative measures	
c. Data analysis toolkit and protocol	
3. Hire and cultivate five underrepresented, recent college graduates, to join five current interns, for the Education Program Internship Corps (EPIC) initiative to focus on group STEM tours and related workshop activities	January 2015
a. Train EPIC interns as tour facilitators and student mentors	➤ Ongoing
b. Gather intern feedback and incorporate feedback into continuous improvement of program	➤ Every 6 months
4. Train current docents with STEM educational materials	May 2015
a. Design STEM educational materials that align with grades 4-8 state curriculum standards	
b. Incorporate artistic strengths of current tour staff into program	

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Project Activities	Results Timeline
delivery	
5. Train all docents and EPIC interns in protocols for observational analysis of student engagement	August 2015

2.3 Project Resource Needs and Institutional Contributions-

IMLS Resource Contributions	Museum Resource Contributions
<ul style="list-style-type: none"> • personnel salaries, wages, and fringe benefits • materials, supplies, software, and equipment • consultant fees • publication design and printing • staff and volunteer training • internships/fellowships 	<ul style="list-style-type: none"> • Community outreach and personnel recruitment • personnel salaries, wages, and fringe benefits • materials, supplies, software, and equipment • consultant fees • publication design and printing • staff and volunteer training • internships/fellowships

While the Museum has shown a deficit within the years prior to this proposal, much of this was attributed to the depreciation of its 22,000 sq-foot core exhibit, *And Still We Rise*. The Museum operates under a balanced budget but has had to reduce staff, highlighting staffing needs to implement STEM programs. The Museum has now launched individual giving campaigns for the purposes of developing staff to best utilize *Inspiring Minds*. IMLS Grant funds, matched by corporate and individual contributions are key measures during this frontloaded cost phase. While the Museum would have preferred to develop staff simultaneously with the exhibit, funding reductions made installation the priority. Successful staff development creates long-term efficiency by creating institutional knowledge, STEM-able educators, and replicable internal training guidelines. The Museum has recently revitalized its Board of Trustees and has placed itself in significantly improved footing to support long term strategic capacity needs.

2.4 Project Management and Dissemination of Results - The Museum President and V.P. of Exhibitions and Education will work together to direct and monitor progress toward achieving intended results. The addition of the primary STEM educator and EPIC interns will maximize the impact of the facility through delivery of needed educational programs capable of demonstrating cultural history, core concepts, and positive associations with STEM. As a history Museum, the development of educators, long-term tour designs, and additional staff trained specifically for engaging minority students with STEM fields are critical in making the facility a beacon of inspiration. Results shall be shared internally through group meetings and trainings, as well as establishing lesson planning and teaching guidelines. All of which will be made available to school classrooms, administrators, and informal learning institutions. EPIC interns will also share their experiences with the public through regular blog entries hosted on the Museum’s website and guest editorials printed in the official newsletter.

3.0 PROJECT RESULTS

3.1 Tangibles and Knowledge, Skills, Behaviors, and Attitudes Addressed -Professional development including the addition of a dedicated STEM educator, specialized internships, and training of current educators will substantially impact the Museum’s Education Department in its ability to provide great aesthetic,

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interpretive, and intellectual experiences and learning opportunities that can inspire and serve diverse audiences for a lifetime. When considering that minority communities are the fastest growing demographics in the country, yet there has only been a 2% growth in African-Americans in STEM professions over the past 30 years¹¹, generating interest among African-American youth is the single most important attitudinal impact. Developing Museum staff to connect students with fun STEM environments which demonstrate representative heroes is the primary institutional result. Created tangible products will include: tour scripts for multiple grade levels, intern training manuals, observational analysis guidelines, take-home lesson reviews, and educator development reports. Additionally, this project serves both community and educational needs by recruiting and developing young minorities into museum professionals. This expands both minority access to Museum and informal learning spaces while increasing the benefits of STEM literacy as a vehicle for broader participation throughout other career or interest areas.¹²

3.2 Measures of Success - Informal learning spaces are museums' greatest assets in generating experiences that allow individuals to engage with concepts at their own pace without a prohibitive concern of potential failure. Especially when considering the context of Detroit school systems and the overwhelming minority attrition within science learning,¹³ it is a mistake to use achievement based testing as the primary measurement of increasing interest. While some baseline assessment is important to understanding concept delivery, information retention is an improper primary yardstick for evaluating the significance that even single visits to quality informal spaces can have on the long-term development of a student's scientific potential.¹⁴ Learning is a pathway with multiple entry points, when the ultimate goal for a project like ours is to promote a desire for continued learning, *attendance* is the most appropriate external metric of success.¹⁵ Success of the project will be judged by its ability to:

- Increase educational staff capacity;
- Yield long-term training procedures and manuals for tour guides working with this facility;
- Increase overall attendance;
- Increase direct STEM relationships with Detroit Public Schools; and
- Increase partnerships and collaboration with schools and organizations that serve the preK-12 community.

The Museum will assess the educational readiness of its staff by evaluating their familiarity with and ability to deliver tour experiences with support the following learning priorities:

- Create inclusive learning environments which promote individual contributions to group goals¹⁶
- Explore scientific theory through cultural context communications¹⁷
- Facilitate debates over scientific theory, broad concepts, and ethical consequences for daily living¹⁸

¹¹ Barber, L.D. "The Interest Convergence Dilemma in STEM Education," Project STEP-UP. University of Illinois at Urbana-Champaign, 2012

¹² Gabrielle H. Lyon, Jameela Jafri, and Kathleen St. Louis, "Beyond the Pipeline: STEM Pathways for Youth Development," *Aferschool Matters Journal*, Fall 2012

¹³ The National Science Foundation's 2012 report on, "Science and Engineering Indicators," finds that Blacks and Hispanics take the fewest credits in advanced Math and Science courses.

¹⁴ National Research Council, cited at footnote 1

¹⁵ Colin Johnson, "Science Centers as Learning Environments," ASTC Board of Directors address, 2009

http://www.astc.org/resource/education/johnson_scicenters.htm

¹⁶ Kareen Malone and Gilda Barabino, "Narrations of Race in STEM Research Settings: Identity Formation and Discontents," *Wiley InterScience*, September 2008

¹⁷ Natalie A. Tran, "The Relationship between Students; Connections to Out-of-School Experiences and Factors Associated with Science Learning," *International Journal of Science Education*, November 2010

¹⁸ Christopher Emdin, "Dimensions of Communication in Urban Science Educaiton: Interaction and Transactions," *Wiley Online Library*, August 2010

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- Utilize free play practices for personal interest learning within the exhibition

The Museum will complete a three-fold project evaluation to identify strengths and opportunities for improvement as a guide during, and beyond, the grant period. Specifically, the three-fold project outcome evaluation will include an internal and external assessment of: (1) education staff which includes EPIC interns, (2) schedule compliance, and (3) community feedback. Evaluation of community feedback and staff capacity will occur through focus groups, member surveys, and with various organizations that utilize education programs such as Detroit Public School's teachers and administrators. Evaluation will include:

- ✓ Impact of educators ability to express the importance of minority entry into STEM fields
- ✓ Increase in overall audience by 5% in the first year
- ✓ Increase in number of schools by 10%
- ✓ Increase in community partnerships by 10%
- ✓ Post-visit discussions with educators and students to gauge experience retention and reflection after extended periods following single-visits.
- ✓ Self-reported quality of capacity and development opportunities
- ✓ Optimal student group sizes, length of educator led tours, and ability to maintain participation
- ✓ Confidence and capability in relating core and abstract scientific concepts to everyday life situations for students

3.3 Strategic Impact and Sustainability - The successful implementation of the project is central to multiple planks of the Museum's overall strategic plan. Significant resources have been allocated in the build of a truly unique facility, but staff development is critical to long term success. As part of assuring that the Museum makes meaningful strides in delivering products that connect itself more thoroughly with children, families, and local classrooms, proper STEM education staffing is integral to addressing real community needs. Pathways towards greater inclusion of minorities into the STEM workforce are vital components of facilitating healthy communities. Success of this project, which includes tailored educational delivery through *Inspiring Minds*, is mutually beneficial to the Museum's institutional strength and the broader community as project success fosters deeper relationships with local schools and corporations, motivates minority students to pursue work in STEM fields, and increases on-site attendance.

The Museum is intimately dedicated to this project as adequate levels of STEM-trained staffing serves community leadership, service, and educational goals; both for the local community and national needs. The construction of the *Inspiring Minds* exhibition has been an ongoing development sought after by the Museum for many years. Now that design, fabrication, and installation phases have been completed, staff capacity development and delivery training comprise the appropriate next phase. Cost-burdens for initial construction are nearly complete allowing subsequent revenue to be shifted towards the lesser costs of maintenance and staff retention. Furthermore, IMLS dollars, matched by corporate and individual contributions, allow for the primary staff development stage, the largest training cost. Upon completion of initial staff development for STEM education, fundraising is less hampered by training needs because a core training program base has been established, creating greater efficiency overall. Ultimately, the success of the exhibit and its programming increases attendance and therefore increases earned revenue that can be invested in sustaining the program. Additionally, the Museum has launched an individual giving campaign which widens our continued giving net for the purposes of sustaining the cost of increased staffing. The campaign has already shown promising returns in its infancy. The Museum has also welcomed nine new members of its Board of Trustees, all of which have educational and corporate networks to draw upon for sustaining expanded operations. The Board has also doubled its annual contribution requirements which serve as an operational boost during donor diversification.

