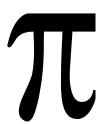
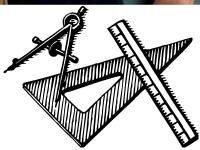
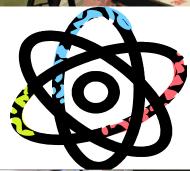
# Maryland Afterschool & Summer Learning STEMPOSIUM





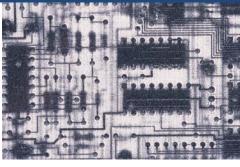












Thursday, August 2, 2012 ◆ 8:30 a.m. to 12 noon University of Maryland Baltimore County, University Center





### **NOTES**







## Every great advance in science has issued from a new audacity of imagination.

### ~John Dewey, The Quest for Certainty, 1929

Dear Participants,

Welcome to the STEMPOSIUM. We hope you have brought an audacious imagination with you today to participate in a conversation about a systemic approach to expanding high quality afterschool and summer **STEM** learning opportunities for Maryland's young people.

In the **Out of School Time (OST)** world, we focus on **Positive Youth Development.** The best learning in afterschool and summer programs places young people at the center as active and engaged leaders, allows for exploration and trial and error, and provides the new three Rs: Rigor, Relevance and Relationships. Both the process and content learning in high quality STEM provide a perfect match to the OST environment.

For some the words Science, Technology, Engineering and Math have an intimidation factor. With training and professional development we can build confidence in educators that and young people that STEM learning is about co-exploration, not about finding the right answer.

We can focus on the need for preparing students to fill the growing demand for skilled workers in STEM career. This too is youth development – offering the experiences and knowledge for success in education, career and life. Though not every young person will be a scientist, engineer or mathematician, STEM done right will build critical thinking, problem solving, collaboration skills that will support success in any field.

As you will see today, there is great work already being done across the state! However, to accomplish more, to increase quality, to reach those who don't currently have access to programs, and to measure the impact of these programs we will need to collaborate and build support systems. We hope you will engage in the co-inquiry process with us today and give us critical feedback and your best, most audacious ideas. We also hope you will continue to work with us and join us in this collaborative effort going forward!

Onward, Ellie Hitchell

Ellie Mitchell

Director, Maryland Out of School Time (MOST) Network

www.mdoutofschooltime.org

emitchell@mdoutofschooltime.org







### **BACKGROUND**

The Maryland Out of School Time (MOST) Network is one 40 statewide afterschool networks supported by the **Charles Stewart Mott Foundation**, with matching investment from local partners. MOST is a broad-based coalition working to expand the quantity and quality of afterschool and summer opportunities available to Maryland's youth.

The OST STEM Planning effort was underwritten by two funding organization. The Charles Stewart Mott Foundation currently supports the National Network of Statewide Afterschool Networks and the Expanded Learning and Afterschool Project. The Noyce Foundation focuses on improving instruction in math, science, and early literacy in public schools. The organization particularly supports out-of-school science programs that show promise of sustaining and engaging students' interest through middle school.

In response to the Noyce & Mott Foundations' Planning Grant Request for Proposals, MOST designed a Science, Technology, Engineering and Mathematics (STEM) Building Planning Process that took place from March through August 2012. Within this project, MOST hired a consultant, Joan Michel of Profile Partners LLC, to facilitate planning meetings and complete a scan of the current landscape of informal STEM education opportunities in Maryland and opportunities in the field, convened a core OST STEM planning group monthly to construct a STEM Building Plan, and planned this Maryland Afterschool and Summer STEMPOSIUM to engage the broader group in the planning process. We appreciate the support, collaborative spirit and creative ideas of the Core Planning Team:

- Dr. Jude Abanulo, Howard University
- Rebkha Atnafou, The After-School Institute
- Susan Ciavolino, Boys & Girls Clubs of Harford County
- Rob Clark, Family League of Baltimore City
- Vanessa Diggs, Maryland State Department of Education
- Nia Fields, University of Maryland Extension, Baltimore County 4H
- Denise Frebertshauser, University of Maryland Extension, 4H
- Dr. Monique Head, The After-School Institute
- Amy Harmon Krtanjek, SAIC
- Dr. Susan Hoban, UMBC Joint Center for Earth Systems Technology
- John Jewett, Howard County Public Library
- Angela Lagdameo, Governor's Office of Policy
- Anita O'Neill, Montgomery County Public Schools
- Christy Rather, Maryland State Department of Education
- Maxine Seidman, Play Keepers/Maryland School Age Child Care Alliance
- Lynn Sobolov, Montgomery County Collaboration Council
- Carol Walsh, Montgomery County Collaboration Council
- Kendra Wells, University of Maryland Extension, 4H
- Katie Willse, National Summer Learning Association
- Randall Ziman, Y of Central Maryland





### **TODAYS AGENDA**

8:30 – 9:00 **Breakfast, Registration & Interactive Experience Stations** 

9:00 – 10:00 **General Session** 

- Introductions & Welcome:
   Ellie Mitchell, Maryland Out of School Time Network
- Remarks:
   Catherine Krutchen, Informal Science Educator: NASA Goddard Visitor Center
- Initial Results of STEM & OST Maryland SCAN Joan Michel, Profile Partners LLC
- Introduction of Strategic Plan
   Ellie Mitchell, Maryland Out of School Time Network

10:00 – 10:30	Networking Break	, Interactive Ex	perience Stations	& Transition to Groups

10:30–11: 30 Facilitated Break Out Sessions

11:30– 12:00 Closing & Next Steps

### SPEAKER INFORMATION



Catherine Krutchen is an Informal Educator for the NASA Goddard Visitor Center. The visitor center at NASA's Goddard Space Flight Center Greenbelt, Md., provides inspiration and a captivating educational experience for all ages. Goddard's visitor center demonstrates their innovative and exciting work in Earth science, astrophysics, heliophysics, planetary science, engineering, communication and technology development. Browse the unique, informative exhibits and learn about

climate change, climb inside a Gemini capsule model, encourage a child to dream as he or she pulls on our kid-sized spacesuit, or participate in one of the monthly model rocket launches.

http://www.nasa.gov/centers/goddard/visitor/home/index.html

http://www.facebook.com/NASAGoddardVisitorCenter

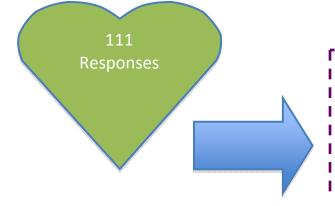




### LANDSCAPE SUMMARY

The **Out of School Time Survey** was sent to the Maryland Out of School Time Network e-mail database (1350) and then promoted via a variety of Out of School Time related networks including **21**<sup>st</sup> **Century Community Learning Centers, Local Management Boards,** School System STEM Coordinators. Data collection and analysis is ongoing.

### **Top Line Results**



- 72% of respondents currently offer at least one STEM afterschool or summer program
- 28% of respondents do not have a STEM program at all
- Of those without a STEM program, 70% would like to add STEM to their curriculum



### **TOP 3 Reasons for not offering STEM**

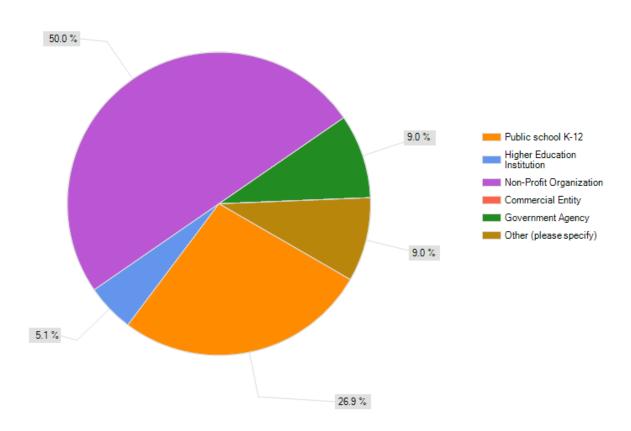
- 1. Do not have funding for STEM curriculum (48.4%)
- 2. Other (41.9%)
  - a. "Not sure how to integrate it into our existing program model without losing the existing foundation which is social emotional learning using a research based curriculum."
  - b. "Our focus has been primarily on visual and performing arts and I don't believe there would be enough time to introduce the STEM curriculum. If it were to be incorporated, it would have to be very specifically tied to the goals of our arts programming and for this - we would need guidance."
  - c. "Need to learn more about STEM!!"
  - d. "Very few volunteers"
- 3. Do not have qualified Staff (25.8%)

### LANDSCAPE SUMMARY





### What type of organization do you represent?



### Possible Gaps

- Few programs for high-school students (~10)
- More than half the programs focused on science curriculum; less than 25% focused on math
- Several counties with no programs reported

### **Best Practices**

- 80% taught by a paid teacher
- 50% provide transportation
- Most provide snacks or a meal
- 80% provide some kind of professional development

### STEM & OUT OF SCHOOL TIME STRATEGIC PLAN

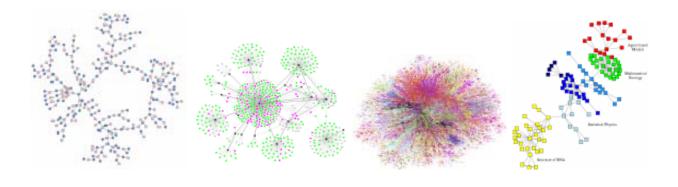




Vision: All school-age, Maryland youth have access to high quality STEM learning opportunities in the out-of-school hours that develop critical thinking, problem solving and collaboration skills that will lead to success in career, work, and life in the 21<sup>st</sup> century.

Mission: Provide STEM OST program providers and partners a set of tools and resources to support the growth of STEM OST programs across the state.

Goal 1: Establish a state-wide OST STEM Collaborative Network that provides infrastructure of resources and support	Goal 2: Develop roadmap for OST STEM program expansion	Goal 3: Create multi- directional communications channels by which OST STEM programs and support can be marketed and improved
Objective 1: Create formal collaboration structure to engage and define roles for members and partners	Objective 1: Collect landscape data about existing OST STEM Programs across Maryland	Objective 1: Market OST STEM Collaborative to potential stakeholders
Objective 2: Facilitate a coordinated state-wide system of professional development and technical assistance for OST STEM	Objective 2: Identify OST STEM Needs by geography, demographics, program type and develop localized profiles and recommendations.	Objective 2: Raise awareness of the availability, importance, and impact of OST STEM programs
Objective 3: Develop common system for program assessment and outcomes evaluation	Objective 2: Develop OST program evaluation model and weighted decision matrix tool for use by communities	Objective 3: Create interactive mechanisms for people to connect and communicate







### **Guiding Principles**

- This strategic plan looks to support the expansion of OST STEM programs that have a Youth
  Development approach and that utilize research and best practices within the field of Youth
  Development as they implement STEM programming. One local frame of reference for Youth
  Development and program design is the Maryland Out of School Time Programs Quality Standards
  Framework.
- To increase access to STEM programs for youth at different age levels and different backgrounds, this initiative must design tiered and varied approaches with pathways between levels of engagement as depicted in Illustration #1. The bi-directional arrow indicates that each level of opportunity should intentionally connect young people to additional learning and engagement opportunities.
- 3. Emphasis and priority for new programs and new investment will be placed on addressing gaps in access to OST STEM programs based on available data. New programs should focus on areas where there are few informal STEM learning opportunities as a result of geography, poverty, or both. Additionally, as supported by the recent results of the Maryland State Assessments, there needs to be an intensified effort to address the persistent, growing and dramatic achievement gaps apparent in the Math and Science assessments in a number of jurisdictions across the state.

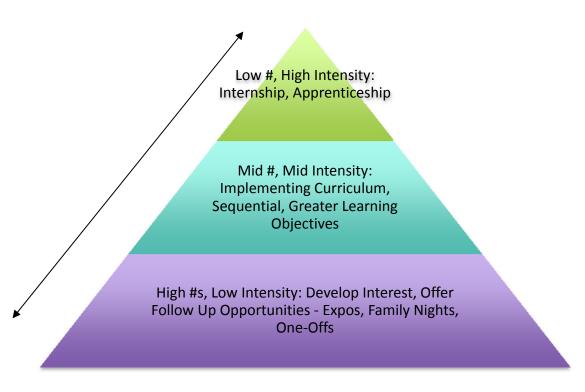
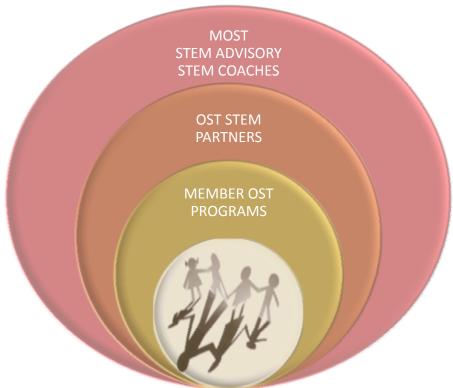


Illustration 1: Tiered Levels of OST STEM Programming





Goal 1: Establish a statewide OST STEM Collaborative Network that provides infrastructure of resources and support for organizations and individuals looking to expand OST STEM.



Objective 1: Create formal collaboration structure to engage and define roles for members and partners

To achieve the vision of expanding access to STEM learning programs across the state, many organizations and sectors need to be engaged with a coordinating entity serving as the core to which there are many spokes. A collaborative allows for different roles, strengths and resources to be realized within an organized system. The Maryland Out of School Time (MOST) Network will serve as the central hub for the OST STEM Collaborative (OSC). In its role as the OSC coordinating entity MOST will:

- 1. Establish a high level OST STEM Advisory Board
- 2. Serve as a clearinghouse for OST STEM related resources for the state of Maryland;
- 3. Connect Maryland to national trends and opportunities via its participation in the National Network of Statewide Afterschool Networks;
- 4. Coordinate professional development and training on a variety of curricula;
- 5. Develop a cadre of OST STEM Coaches to provide technical assistance on selecting/implementing curricula and on assessment and data collection;
- 6. Collect, synthesize, and share quantitative and qualitative data to make the case for OST STEM to funders and policy makers and support continuous program improvement;
- 7. Create an OST STEM learning community;





- 8. Organize statewide OST STEM events and festivals; and
- 9. Facilitate connections between OSC members and OSC partners

**OSC Partners** are organizations or individuals with a key interest and commitment to expanding STEM afterschool opportunities. Examples of potential partner include Colleges & Universities, Business, STEM Content Providers, Intermediaries, Researchers, Policy Makers, and Advocates. Partner roles will vary based on the mission and focus of the organization or individual and could include:

- 1. Supporting research and evaluation efforts
- 2. Delivering OST STEM Content
- 3. Offering OST STEM volunteers
- 4. Providing coordination and access via their local and state networks
- 5. Investing dollars and in-kind resources in OST STEM Programs
- 6. Advocating for policies and investments to support and expand OST STEM
- 7. Building awareness around OST STEM in the community

**OSC Members** are afterschool and summer program providers in any setting (school or community) that are either currently offering STEM programming and want to join a OST STEM learning community or want to begin offering STEM programming to their participants and would like support in getting started. An afterschool program provider becomes a Member of the OSC by agreeing to:

- 1. Offer STEM programming, reflective of best-practices, regularly to their program participants;
- 2. Assess their STEM offerings using a common assessment tool and share their assessment data; and,
- 3. Implement a common youth outcome measurement tool and share the data collected

### **Benefits to Members & Partners**

- Facilitated partnership development
- Access to training, professional development and technical assistance to support STEM program implementation
- Support in designing and implementing program evaluation and data collection
- Access to program level and aggregate data for program improvement and making the case for support
- Participation in a professional learning community
- Inclusion in communications, marketing and special events for the collaborative

Measuring for Success: In the pilot phase (2012-2013) at least 40 OST programs will be recruited to participate in the OSC, and at least 20 partners will be identified. Of the 40 OST Programs at least half will be new to offering STEM programming. In the second year member ship will double to 80 OST programs and by the third year, 100 programs and 30 or more partners will take part in the collaborative, impacting at least 5,000 students.

assistance for OST STEM





Many lessons have been learned about improving quality in afterschool and summer settings. Some of the common elements include offering support in the selection and implementation of high quality curricula, providing regular opportunities for training and professional development for frontline staff and program coordinators, and perhaps most importantly on-site coaching.

The OSC will select approximately 8 to 10 high quality **STEM curricula** or sets of STEM curricula to support within afterschool and summer settings. During the year the Collaborative will coordinate a centralized calendar of regional trainings based on the interest and demand from collaborative members. Trainings will be offered at low or no cost to members, and open (fee-for-service) for non members. A number of potential curricula and content partners are listed in the Resources section.

Additionally, the OSC will employ a team of at least 5 STEM Coaches (one for each region of the state), to provide technical assistance via e-mail, phone and on-site. The Coaches will:

- Support programs, when needed, through the decision process of selecting curricula;
- Help programs access the coordinated training and professional development opportunities;
- Connect Members to Partners;
- Visit programs and provide on-site coaching; and,
- Support program assessment and data collection.

•

Measuring for Success: In the pilot phase (2012-2013). At least 20 regional trainings will be offered on a variety of STEM Curriculum reaching 200 or more OST educators. Coaches will provide at minimum 500 hours of coaching to the 40 member programs. Trainings and coaching will be evaluated through member feedback.



Frontline staff experience NPASS *Design-It!* Curriculum. (The After-School Institute)



### Objective 3: Develop common system for program assessment and outcomes evaluation

One of the most exciting features of the collaborative is the opportunity to provide programs critical tools to assess their program quality on the ground and measure the impact of the program on youth. Assessment and evaluation has been an ongoing struggle and an area of innovation in the Out of School Time. MOST's connections to national and regional efforts in OST and STEM will link Maryland programs to new tools and resources. Examples of these resources include:

- PEAR (Program in Education, Afterschool and Resiliency), a collaboration between Harvard
  University and McClean Hospital has developed ATIS (Assessment Tools in Informal Science) as
  a clearinghouse for programs. PEAR has also developed a new OST STEM program quality
  observation instrument called the Dimensions of Success.
- The Weikart Center for Youth Program Quality also offers a STEM focused version of the Youth Program Quality Assessment tool (YPQA-STEM).
- Common Goals, Common Assessments, a collaborative project of the Noyce Foundation has developed "The Excited, Engaged and Interested Science Learner" Survey
- The Collaborative for Building Afterschool Systems (CBASS), has disseminated best practices from a local systems building perspective through FUSE (Frontiers In Urban Science Education)
- **Project Liftoff** is a mid-western states consortium of OST STEM systems builders that have been piloting assessment tools and strategies to support OST STEM at the statewide level.

MOST has access to technical assistance and support for implementing these resources within an OST SYSTEM. Utilizing these resources, the OSC has the potential to collect a powerful data set that will both help individual programs tell the story of their impact and use data for program improvement, but will also allow for a collective impact assessment and could lead to real and significant research opportunities.

In addition the OSC will explore the use of **Badges** to recognize the accomplishments of youth participants and programs. Virtual Badges offer an opportunity to document the experiences and skills of young people in OST programs and create a portable platform to share achievements and even gain credit (high school or college) or communicate skills to future employers. Badges can also serve to recognize the accomplishments of program providers.

Measuring for Success: Members will enter into a data sharing agreement with the OSC. Beginning in 2012/2013 programs will use a common program quality assessment tool. By 2013/2014 Member programs will utilize a common framework for measuring outcomes. The OSC will develop a common set of Badges for implementation by 2014



### **GOAL 2: Develop a roadmap for OST STEM program expansion**



The vision for Maryland STEM OST programs is that all school age, Maryland youth have access to high quality STEM learning opportunities in the out-of-school hours. While we know that some students and communities have greater access to high quality STEM OST programs than others, we don't yet have specific data about unequal access to STEM OST programs. Similarly, we know anecdotally about the scalability

and effectiveness of STEM OST programs, we do not yet have a common baseline of data or set of evaluation criteria.

### Objective 1: Collect landscape data about existing OST STEM Programs across Maryland

The MOST Network is working to collect data on all existing STEM OST programs and the students currently served by the program. The data will be utilized for building the OST STEM collaborative described in Goal 1, setting priorities for new investments as resources are available, as well as connecting educators, youth and families to OST STEM learning opportunities. MOST will continue this data collection as new programs are developed. Once collected and analyzed, this catalog will eventually be made available to the public in an online format leveraging an existing tool like the Maryland Business Roundtable's STEMNet, and available via the MOST Network Web site.

Measuring for Success: By 2014 basic data will have been gathered on at least 80% of estimated existing STEM OST programs involving 20 students or more. Database grows by 10% per year for three years.

Objective 2: Identify OST STEM Needs by geography, demographics, program and develop localized profiles and recommendations.

When MOST was in its early stages of development, the network produced county level assessments and profiles of the resources, opportunities and challenges in the OST landscape. Many decisions about education, funding, and community priorities are made at the county and local levels. MOST would like to update these county-by-county scans including OST STEM as part of the data collection.

The environmental scan, the OST STEM catalog, and the assessment data from our ongoing evaluation will be included in the county level needs assessment. Much like the State STEM Vital Signs Profiles developed by **Change the Equation** we will also look at the district level student performance and achievement gaps. We will also identify STEM related resources and potential partners unique to each jurisdiction.





This data will be shared with counties along with a set of recommendations for program growth. The data and county-specific reports will be reviewed and reassessed every two years. An aggregate report will be prepared for the state as well. Each profile will be released publicly and shared with the OST community, school systems, policy makers, funders and elected officials.

Measuring for Success: In 2012-2013, the OSC will produce 10 (out of 24) county profiles, targeting counties with the greatest achievement gaps and release a 2012-2013 Maryland OST STEM Vitals Signs.

Objective 3: Develop OST weighted decision matrix tool for use by communities

High-quality OST STEM programs have certain best practices in common: connection to the classroom, family involvement, accessibility, hands-on learning, and integrated curricular elements. The OSC will evaluate existing OST STEM programs against a set of criteria (best practices), which will result in a prioritized list of OST STEM programs the OSC recommends for use by communities or organizations looking to expand OST STEM offerings.

The OSC will then create a list of variables common to communities in choosing a STEM OST program: cost of program, student-teacher ratio, use of subject matter experts, ease of launch, etc. Each of these elements is more or less important to a community looking to expand its STEM OST programs. A community with deep pockets may place more emphasis on certain characteristics than communities looking primarily for a low cost per pupil program.

The MOST Network will evaluate existing STEM OST programs' characteristics using a numeric scale and use this data to create an interactive decision tool to assist communities in choosing the most appropriate STEM OST program recommended by MOST.

We will also utilize existing resources for identifying curriculum that have already been created like the **Science After School Consumer's Guide.** 

### **Example Decision Matrix:**

SECOND	STEM	NearPee	Math
Robotics	BEST	r	Yay!





	Weight of Factor (scale of 1 to 10)	Factor score (scale of 1 to 10)			
Factor					
Low cost per person	8	5	8	7	4
Low student-teacher ratio	3	2	1	2	7
Easy to launch	10	5	7	10	3
Mostly focused on science	9	10	4	3	8
Mostly focused on math	4	1	1	2	10
Requires SMEs	9	10	10	10	5
Low cost of materials	5	2	3	8	8
Score		290	224	266	230

Weight demonstrates how important that factor is on a scale of 1 to 10

**Factor** represents what is important to the community and the relative importance of each item

Score is the total of factor weight times initiative factor score (out of 1000)

Measuring for Success: The OSC will measure the number of programs that utilize the tool and follow up with questions about satisfaction with the decision resulting from the utilization of the tool so the tool can be further refined.



## Goal 3: Create multi-directional communications channels by which the OST STEM Collaborative and OST STEM programs can promote their impact, increase awareness and collect feedback.

### Objective 1: Market STEM OST Collaborative to potential stakeholders

One of the critical jobs of MOST and the OSC will be to make the case to key constituencies that STEM learning and Out of School Time are a powerful combination that will positively impact youth in our communities. We will need to convince funders to invest in programming and entice partners and members to join forces. The OSC will produce brochures, white papers and other written materials as needed and create opportunities for public forums for a variety of audiences including educators, funders and policymakers. The OSC will require a segmented communications strategy. Our name, brand, website and a social media presence will explain the work of the OSC, celebrate successes and share resources.

### Objective 2: Raise awareness of the availability, importance, and impact of OST STEM programs

To serve as a clearinghouse for opportunities, the OSC will collaborate with the Maryland Business Roundtable to build out a hub for Out of School Time on STEMnet. This will connect teachers and youth development professionals to research, information on curricula and complementary STEM learning opportunities for their students.

When a parent or young person goes hunting for STEM Opportunities, their search may come from any number of search engines or sources. Our goal will be to connect our database and information resources to as many national and local outlets for STEM and OST as possible including but not limited to STEMnet, the **STEM Connectory**, and the **Girls Collaborative Project**.

Measuring for Success: The OSC will track the number of members, and the number of partners and keep analytics for the web and social media presence. The first Maryland focused OST STEM brief will be produced in 2012-2013.

### Objective 3: Create interactive mechanisms for people to connect/communicate

Each year the OSC will host a statewide OST STEM Expo. The Expo will be an opportunity for programs and their youth participants to interact across jurisdictions and across curricula. Youth will have opportunities to demonstrate mastery and share experiences. Program providers will get the opportunity to see the breadth and depth of possible STEM offerings. The Expo will also be a chance to share the collective impact of the Collaborative members with funders and policy makers.

As part of our efforts to build a learning community we will create both virtual and in person networking events and tools to allow OST STEM practitioners to interact and share challenges and best practices.

Measuring for Success: In the first year of the Expo (2013-2014), more than 200 youth and 50 program providers will participate. The learning community will include member and partners with a target participation of 100 individuals by 2013.

GLUSSAKY & KESUUKCES

### 21<sup>st</sup> Century Community Learning Centers:

http://www.marylandpublicschools.org/MSDE/programs/21centurycommunity/?WBCMODE=P%25 25%253e%25%3E

The purpose of the 21st Century Community Learning Centers (21st CCLC) is to create community learning centers that provide students with academic enrichment opportunities as well as additional services designed to complement their regular academic program. Community learning centers must offer families of participating students literacy instruction and related educational development programs. Proposed activities target students and families of students who attend schools eligible for Title I school-wide programs or schools that serve a high percentage of students from low-income families. 21<sup>st</sup> CCLC is a grant program of the United States Department of Education administered by the Maryland State Department of Education.

Achievement Gap: The Achievement Gap is the difference in performance between low-income and minority students compared to that of their peers on standardized tests. Maryland has the second largest disparity in the country between the academic performance of low-income students and their wealthier peers in eighth grade math. On the 2011 National Assessment of Educational Progress only 18% of Black students in eighth grade scored at least proficient on the math exam, compared to 56% of White students. This 38 point performance gap is higher than it was in 1990 when the gap was 19 percentage points (The State of Maryland Education 2012, Maryland CAN)

The Afterschool Alliance: www.afterschoolalliance.org





The nation's leading voice for afterschool, the Afterschool Alliance is the only organization dedicated to raising awareness of the importance of afterschool programs and advocating for more afterschool investments. STEM is a key focus area of policy for the Afterschool Alliance and a number of policy and program resources area available at <a href="http://www.afterschoolalliance.org/STEM.cfm">http://www.afterschoolalliance.org/STEM.cfm</a>

### Badges: <a href="https://wiki.mozilla.org/Badges">https://wiki.mozilla.org/Badges</a>

Learning today happens everywhere, not just in the classroom. But it's often difficult to get recognition for skills and achievements that happen outside of school. Mozilla's Open Badges project is working to solve that problem, making it easy for anyone to issue, earn and display badges across the web -- through a shared infrastructure that's free and open to all.

### Change the Equation: <a href="http://changetheequation.org">http://changetheequation.org</a>

Through their coalition of CEOs, Change the Equation pledges to foster widespread literacy in science, technology, engineering and mathematics (STEM) that sparks an innovative spirit in students and prepares them for postsecondary options.

### The Charles Stewart Mott Foundation: http://www.mott.org

The Charles Stewart Mott Foundation affirms its founder's vision of a world in which each of us is in partnership with the rest of the human race — where each individual's quality of life is connected to the well-being of the community, both locally and globally. The Mott Foundation's portfolio includes the National Network of Statewide Afterschool Networks: <a href="http://www.statewideafterschoolnetworks.net/">http://www.statewideafterschoolnetworks.net/</a> and the Expanded Learning and Afterschool Project: <a href="http://www.expandinglearning.org/">http://www.expandinglearning.org/</a>

### Coalition for Afterschool Science: <a href="http://afterschoolscience.org">http://afterschoolscience.org</a>

The Coalition is a strategic alliance of individuals and organizations from STEM education, youth development and programs held outside of school time. Their mission is to coordinate and mobilize community stakeholders to strengthen and expand opportunities that engage young people in science after school.

### The Collaborative for Building Afterschool Systems: http://www.afterschoolsystems.org

The Collaborative for Building After-School Systems (CBASS) is a partnership dedicated to increasing the availability of quality after-school programming by building citywide after-school systems. One of the CBASS demonstration projects has been focused on bringin OST STEM programming to scale. See their FUSE (Frontiers in Urban Science Education) Guide at:

http://www.afterschoolsystems.org/content/document/detail/3040/

### Local Management Boards: http://www.goc.maryland.gov/lmb map contacts.html

LMBs serve as the coordinator of collaboration for child and family services. They bring together local child-serving agencies, local child providers, clients of services, families, and other community representatives to empower local stakeholders in addressing the needs of and setting priorities for their communities. There is an LMB in each county and in Baltimore City. In 2011, twelve of twenty-four LMBS funded, monitored and provided support for OST programs in their counties.

Maryland Business Roundtable for Education: http://mbrt.org/





MBRT works to achieve meaningful, measurable and systemic improvement in schools and student achievement. We believe the keys to this improvement are high standards, rigorous assessments, and strong accountability. MBRT is building out STEMNet, designed to be a one-stop-shop where STEM teachers can find the resources, support, and professional connections they need to strengthen STEM teaching and learning statewide.

### Maryland Out of School Time Programs Quality Standards Framework:

The Maryland Out of School Time Program Quality Standards Framework, provides a youth development centered guide to designing and administering quality OST programs. The Framework is aligned to the **Youth Program Quality Assessment** <a href="http://www.cypq.org">http://www.cypq.org</a>. To download the framework visit: <a href="http://www.mdoutofschooltime.org/Quality.html">http://www.mdoutofschooltime.org/Quality.html</a>

**OST (Out of School Time):** MOST defines "Out of School Time" opportunities as the activities provided at all times when school is not in session. These activities will serve youth ages 5-18 (up to 21 for youth with disabilities). OST activities provide safe places, encourage academic success, develop youth leadership, and nurture talents and interests so that young people can achieve in their own unique ways.

### PEAR: <a href="http://www.pearweb.org">http://www.pearweb.org</a>

The Program in Education, Afterschool & Resiliency (PEAR) is dedicated to making meaningful theoretical and practical contributions to youth development, school reform and prevention. PEAR has developed ATIS (Assessment Tools in Informal Science) <a href="http://www.pearweb.org/atis/">http://www.pearweb.org/atis/</a> as a clearinghouse to support programs' ability to find the right assessment tool to measure performance of informal and out-of-school science, technology, engineering and math programs.

**Positive Youth Development:** Positive youth development (PYD) is a comprehensive framework outlining the supports young people need in order to be successful. PYD emphasizes the importance of focusing on youths' strengths instead of their risk factors to ensure that all youth grow up to become contributing adults. There are many resources to learn more about PYD – including the Weikart Center for Youth Program Quality <a href="www.cypq.org">www.cypq.org</a>, the Forum for Youth Investment <a href="www.forumfyi.org">www.forumfyi.org</a>, and the Youth Development Institute <a href="http://www.ydinstitute.org/">http://www.ydinstitute.org/</a>

### Project Liftoff: http://www.projectliftoff.net/

Project Liftoff provides leadership and empowers its statewide partnerships to launch statewide systems for informal science education. Project Liftoff currently supports the efforts of nine Midwestern Statewide Afterschool Networks to build systems to support OST STEM.

### National Girls Collaborative: http://www.ngcproject.org/

The National Girls Collaborative Project (NGCP) is designed to reach girl-serving STEM organizations across the United States. The vision of the NGCP is to bring together organizations throughout the United States that are committed to informing and encouraging girls to pursue careers in science, technology, engineering, and mathematics (STEM).





### The Noyce Foundation: <a href="http://www.noycefdn.org/index.php">http://www.noycefdn.org/index.php</a>

The Noyce Foundation aims to help young people become curious, thoughtful, and engaged learners. The Foundation focuses on a few key areas: expanding opportunities for students to experience hands-on science in out-of-school settings; supporting human capital efforts to develop effective teachers and principal leaders; and investing in models and policy for improving the teaching of math and science.

### Science After School Consumer's Guide: http://www.sedl.org/afterschool/guide/science/

The SAS Consumers Guide contains reviews of high-quality, hands-on science content for afterschool programs. Materials include semester and year long curricula, activity kits, instructor guides consisting of many related activities, and Web sites that offer content appropriate for afterschool programs. Users of this guide are able to search and sort entries by title, subject, grade level, target audience, and cost.

### STEM: <a href="http://www.marylandpublicschools.org/MSDE/programs/stem/">http://www.marylandpublicschools.org/MSDE/programs/stem/</a>

The Maryland State Department of Education defines STEM Education as follows: STEM education is an approach to teaching and learning that integrates the content and skills of science, technology, engineering, and mathematics. STEM Standards of Practice guide STEM instruction by defining the combination of behaviors, integrated with STEM content, which is expected of a proficient STEM student. These behaviors include engagement in inquiry, logical reasoning, collaboration, and investigation. The goal of STEM education is to prepare students for post-secondary study and the 21<sup>st</sup> century workforce.

**STEM Curricula & Content:** There are a number of high quality STEM Curricula and STEM Content Partners that were identified in both the landscape and through participation in national conferences and dialogue. The following represent just a sample of STEM learning opportunities that offer a variety of cost models, implementation requirements, and emphasis. The Collaborative would work with programs to identify the curricula and partners that fit best with their individual program models and goals. Examples of possible curricula and content partners for the OSC include:

- The After-School Institute: <a href="http://www.afterschoolinstitute.org/">http://www.afterschoolinstitute.org/</a>
   The After-School Institute has been the central coordinator for training and implementation in Maryland for two nationally recognized sets of STEM curricula NPASS2: <a href="http://npass2.edc.org/">http://npass2.edc.org/</a>
   and Greater Science for Girls: <a href="http://www.greatscienceforgirls.org/">http://www.greatscienceforgirls.org/</a>
- After-School Math PLUS: <a href="http://www.edequity.org/programs/science-and-math-programs#24">http://www.edequity.org/programs/science-and-math-programs#24</a>
   After-School Math PLUS, funded by the National Science Foundation, is designed to be implemented in afterschool setting with students grades 3 through 8. The curriculum uses real-world mathematic activities with art, music, jump rope that are fun and engaging.
- University of Maryland Extension/4H: http://www.maryland4h.org/Links/index.cfm





Maryland 4H Educators are the perfect STEM partners for afterschool and summer programs. 4H offers training and professional development on a number of STEM related curriculum from robotics to environmental science and also bring their expertise on-site to programs.

- Maryland First Robotics: <a href="http://www.mdfirst.org/">http://www.mdfirst.org/</a>
   Maryland FIRST Robotics offers a number of progressive programs for students 5-18 including FIRST Robotics competition, FIRST and Junior FIRST Lego Leagues and FIRST Tech Challenge.
- NASA: <a href="http://www.nasa.gov">http://www.nasa.gov</a>
  NASA has many Maryland and Out of School Time Connections. NASA Goddard's Visitor Center: <a href="http://www.nasa.gov/centers/goddard/visitor/home/index.html">http://www.nasa.gov/centers/goddard/visitor/home/index.html</a> offers informal science education program for youth and families. And NASA offers training and professional development on high quality curriculum including Afterschool Universe <a href="http://universe.nasa.gov/au/">http://universe.nasa.gov/au/</a> and NASA's BEST (Beginning Engineering, Science and Technology) <a href="http://www.nasa.gov/audience/foreducators/best/">http://www.nasa.gov/audience/foreducators/best/</a>

Time Warner Cable's (TWC) Connect a Million Minds (CAMM) is a five-year, \$100 million cash and inkind philanthropic initiative to address America's declining proficiency in science, technology, engineering and math (STEM), which puts our children at risk of not competing successfully in a global economy. One of the key products is the STEM Connectory: <a href="http://connectamillionminds.com/connectory.php">http://connectamillionminds.com/connectory.php</a>

### The Weikart Center for Youth Program Quality: www.cypq.org

The David P. Weikart Center for Youth Program Quality empowers education and human service leaders to adapt, implement, and scale best-in-class, research validated quality improvement systems to advance child and youth development. The Youth Program Quality Assessment (PQA) is a validated instrument designed to evaluate the quality of youth programs and identify staff training needs.





We have the opportunity to make this equation true in Maryland! In order to succeed we need you to give provide your feedback and get actively involved in the effort.

For more information, contact Ellie Mitchell, Director, Maryland Out of School Time, a project of Baltimore's Safe & Sound Campaign.

Email: emitchell@mdoutofschooltime.org

Web: www.mdoutofschooltime.org

Phone: 410-332-0170



