

## F. Musical Extrapolations -- Mansa Gory

**(Level: Grades 6-12)** This workshop will feature a series of musical mini lessons designed for the modern classroom: \*Music and Science, \*Psychology of Music, \*Music Perception, \*String Theory and Time Travel, \*Music-the Sound of Math, \*Music Business Incubator, and \*Baba Brinkman and Friends: Master Poet! **(Workshop held only in the morning.)**

**G. STEAM Ideas to Innovate Learning – Westchester Children’s Museum Workshop – (Level: Grades K-5)** Have you ever read "The Three Little Pigs" through the eyes of an engineer? In this workshop we will explore the scientific concepts of structure and stability as they relate to this classic tale. Think critically about the properties of different materials as you plan and design several model homes. Examine properties such as weight, flexibility, and elasticity, and work with peers to compare and test your designs. The cross-curricular design of this program connects to both science and English language arts learning standards. Students will think like engineers as they compare multiple solutions to a problem. They will develop and use models to communicate their ideas with others, and learn that there can be more than one possible solution to a design problem. Students will explore the disciplinary core idea that different properties of matter are suitable for different purposes. Students will also practice the skill of thinking interdependently as they collaborate with their peers in the building process. **(Workshop held in both the morning and the afternoon.)**

**H. Mars STEAM Lesson Abstract– Natalie Malone, NASA Distinguished Educator (Level: Grades 3-10 and beyond)** Mars, Earth’s closest neighbor, offers a wealth of fascinating possibilities to enrich and extend the elementary curriculum using actual NASA data. In this session we will explore some of the NASA resources available that bring information directly from the Red Planet to your classroom. We will use NASA imagery to explore the geologic and environmental features of Mars, while considering Mars’ similarities and differences to Earth. We will explore the changes to Mars’ surface over time, and consider the most recent discoveries sent back to Earth from the rovers. Perhaps you can inspire one of your students to become a scientist that helps NASA accomplish its goal of sending humans to Mars! **(Workshop held in both the morning and the afternoon.)**

**I. Barnes & Noble Story Design – Aimee Gautreau (Level: Grades K-8)** Barnes & Noble Story Design is an exciting, student-driven, high-engagement interdisciplinary program that combines STEAM with English Language Arts. In Story Design, Grades K-8 students will \*read and understand grade-level literature; \*identify conflicts in a literary text; \*identify a problem in the text that could have a practical, physical, or technological solution; and \*communicate their solutions to the classroom. The Story Design approach, an example of problem-based learning (PBL), is a student-focused approach in which students learn by solving an open-ended problem using procedures they devise. This PBL reflects how real people encounter, identify, evaluate, investigate, refine, and solve problems. **(Workshop held only in the morning.)**

## Exhibitors and Vendors

**Children’s Environmental Literacy Foundation (CELF)**  
914.449.6868 victoria@celfeducation.org

**NASA Endeavor Program**  
908.358.5920 kwoodruff@us-satellite.net

**Westchester Children’s Museum, Rye**  
914.421.5050 info@discoverWCM.org

**Robothink**  
914.539.6612 westchester\_ny@myrobothink.com

**Barnes and Noble – STEAM Materials**  
914.240.3139 agautreau@bn.com

**Lakeshore Learning – STEAM Materials**  
310.537.2968 x2968 svrteeg@lakeshorelearning.com

**Science Teachers Association of NY State (STANYS)**  
webmaster@stanys.org

**Putnam Westchester Industry & Science Teachers Association (PWISTA)**  
914.497.8531 langella@pwista.com



**(Science, Technology, Engineering,  
the Arts and Mathematics)**

**for Grades K-12 Educators**  
**Thursday, March 12, 2020**

**Snow Date: Thursday, March 26, 2020**  
**(If opening is delayed, conference still takes place.)**

**8:30 a.m. – 3:00 p.m.**

**Generoso Pope Foundation**  
**1 Generoso Pope Place, Tuckahoe, NY**



**Co-sponsored by the**  
**Westchester Italian Cultural Center**

**Program**

Register Here:  
[2020 K-12 STEAM Conference](#)

**Planned by this Teacher Center’s**  
**STEAM Advisory Committee:**  
**Mary Beth Anderson, Toni Gamils, Victoria Garufi,**  
**Steven Giglio, Anne Marie Kiernan, Michael Jernegons,**  
**Janet Matthews, Gregoriann Rollins**

## Schedule for the Day

(Buses leave Lake Isle Country Club at 8:00 and 8:30 a.m.)

**8:30 a.m. Registration and Coffee/Tea, etc.**

**8:50 Welcome Remarks**

**9:00 Keynote Presentation:**

***Integrating STEAM Across the Curriculum***

**Susan Woodruff, NASA Endeavor Program**

As Director of the Endeavor Program, Karen will talk about her amazing team of teacher educators dedicated to supporting the integration of STEM and STEAM content and practices in classrooms, and how she connects teachers across the country with NASA scientists, engineers, and innovative problem-solvers through a Space Act Agreement with the agency. She believes and will convince you that grounding content in students' everyday experience and culture is a natural and powerful way to teach.



**9:50 Q&A Session with Susan Woodruff**

**10:00 Break**

**10:15-11:30 Concurrent Workshops on Integrating STEAM into Your Classroom (Note those workshops that are held just once.)**

**11:30 Lunch (bring your own or dine in town)**

**12:30 Vendors/Exhibitors Visits**

**1:15-2:30 Repeat of Concurrent Workshops (Note those workshops that are held just once.)**

**2:30 Evaluations Completed and Collected;  
Announcements  
Raffle (must be present to win)**

**2:40 Closing Remarks**

(Buses return to Lake Isle CC at 2:45 and 3:15 p.m.)

## Concurrent Workshops

**Choose one for the morning and one for the afternoon.**

**A. STEAM and Cooperative Learning Activities Using Five Items or Less-- Michael Jernegons (Level: Grades K-8)** In this engaging workshop, learn many cooperative learning activities integrating STEAM that you can take back to your classroom immediately. Using five or fewer commonly-used and inexpensive items in each activity, you will engage your students immediately to work with each other to complete each STEAM activity. **(Workshop held in both the morning and the afternoon.)**

**B. Inquiry to Action: Engaging Students in Community Science – Victoria Garufi, Director of Education, Children’s Environmental Literacy Foundation (Level Grades 5-12)** Explore how to engage middle and high school students in community science at your school using CELF’s Inquiry to Action Framework. Learn how students become environment health researchers to collect and analyze air quality data in their communities using AirBeam technology and crowd-sourcing platforms. This workshop will demonstrate how students use data to identify sources of air pollution, understand connections to human behaviors, develop prevention and remediation plans for their communities, and share their findings with peers and policy makers. Discover how to replicate CELF’s "Inquiry to Action" with your students! **(Workshop held in the morning only.)**

**C. The Collaborative Classroom: Tips and Strategies --Toni Gamils, NASA Distinguished Educator (Level: Grades K-12)** *The goal is to foster the true innovation that comes with combining the mind of a scientist or technologist with that of an artist or designer. Rhode Island School of Design (RISD)* How do you prepare your students for the fabulous collaboration that can occur when working together as problem solvers? The ability to collaborate with others has become one of the most sought-after skills in education and the workplace. Promoting real collaboration is hard to do well – and it just does not happen on its own. If we want real collaboration, we need to intentionally design it as part of our learning activity. This session will address strategies and provide activities that will promote your students’ success with team-building events throughout the year. **(Workshop held in the morning only.)**

**D. Phenomena: Engage Your Students in STEAM – Toni Gamils, NASA Distinguished Educator (Level Grades K-12)** When you introduce a lesson with a phenomenon, you anchor it with an observable event. A short video clip, picture, hands-on experience, teacher demonstration, or verbal description exposes your students to the phenomenon. The observation is followed by a discussion in which you ask your students to identify the questions that must be asked in order to figure out why that phenomenon occurs. The questions posed by your students actually drive the instruction. Asking questions gives them ownership, enhances the discovery process and teaches problem-solving. In this session participants will be introduced to the exciting phenomena that will stir curiosity, support curriculum content, and motivate questions. Educators will share ideas to use phenomena to engage students in their lessons. The session will conclude with a STEAM activity that will be based on a phenomenon. **(Workshop held in the afternoon only.)**

**E. Magnetic Levitation Vehicle STEAM Project – Steve Giglio (Level: Grades 5-12)** This encompassing science, technology, engineering, arts & mathematics hands-on workshop will prepare teachers to present to students an exciting, fun and informative project. The teacher will design, construct and test a working model of a magnetic levitation vehicle, using a base plate, 4 magnets, electric motor, propeller, wires and foam. The teacher will use various tools such as a utility knife or scissors, ruler, marker, printer or other available tools at their school to fabricate the project with their students. **Science concepts** are balance, center of gravity, torque, friction, magnetic repulsion and series electrical circuits; **Technology concepts** are construction techniques, hot glue techniques, cutting techniques, soldering electrical wires and measuring voltage; **Engineering concepts** are design cycle, action/reaction principle, momentum, inertia, torque roll, and electrical conductivity; **Art concepts** are principles, aerodynamic shaping, color balance, patterns, symmetry and perceived; **Mathematics concepts**, are linear measuring, precision, calculations of average speed, average momentum, and average acceleration. The teacher will work in small groups to determine specific goals for their grade level; design, construct and test their vehicle; and develop an outline for their Lab Report. Historic research could also be included in the lab report if the teacher deems it necessary. **(Workshop held in both the morning and the afternoon.)**