Metropolitan Detroit Science Teachers Association

The Science Scoop

Coverage of:

- ✓ 2016 MDSTA Membership Meeting
  - ✓ Highlights
  - ✓ Ellen Daniel-Jones Distinguished Service Award presentation – Rachel Badanowski
- ✓ Member Benefits
  - ✓ MDSTA grants and awards info
- ✓ 2016 Joint Fall Conference Announcement
  - ✓ Saturday, November 5, 2016 @ Paul K. Cousino High School, Warren, Michigan
- ✓ Science Writing
  - ✓ Articles, Science Surfing, News, Links to science orgs and Opinions

- ✓ **Wanted**: Articles
- ✓ **Wanted**: Seasonal Science Pictures
- ✓ **Wanted**: MDSTA Board Members at Large and Teacher Organizations Liaisons

The purpose of this organization shall be to promote the professional growth of teachers of science at all levels and to improve the quality of science education in the Metropolitan Detroit area. ***(MDSTA bylaws).*** **Founded 1941**

www.mdsta.org

2016 GENERAL MEMBERSHIP MEETING

The 2016 MDSTA general membership meeting took place Tuesday, May 10, 2016 on the campus of Lawrence Tech University in Southfield gathering together MDSTA members, mini-award winners and awardees, friends and families.

WELCOME

About thirty-five individuals attended the meeting.

Members were welcomed to the event by MDSTA board member Debby Peters (picture on the right) and light refreshments provided through the work of Connie Eisenhart (left picture, in the center), MDSTA treasurer and science teacher at Guardian Angels Academy. Participants socialized and enjoyed a relaxed conversation in the company of other attendees.

Cassandra Cayce, MDSTA President (picture on the right), served as the master of ceremonies. She welcomed everyone participating to this annual event and called for the board of directors to introduce themselves to the membership. In attendance were: LaVetta Appleby, Erica Ballard, Connie Atkisson, David Bydlowski, Connie Eisenhart, Pamela Callaway, MDSTA executive director, Kimberly Finley, Margaret Griffin, Tooba Mansoor, Debby Peters, Marilyn Rands (former, long-term member of the board), Valentina Tobos and Kelvin Wise.

For board members contact information please visit the MDSTA web site: https://mdsta.wildapricot.org/Board-Members.

The program began with a series of science activities presented by board members. Mini-grant presentations and Elizabeth Daniel-Jones Distinguished Service Award presentations followed.

The program was concluded with a raffle. All members were winners ….  …and received some MDSTA and science memorabilia.

Who Stole the Missing Brownies? Blood Spatter Analysis *by LaVetta Appleby*

Teachers had an opportunity to explore forensic techniques by exploring blood spatter analysis. Teachers were given a crime scene scenario which stated that Mrs. Betty Cooker's homemade brownies were stolen and her Pyrex baking dish was broken. The brownie thief cut themselves on the broken dish and left blood drops on the floor at the crime scene. The suspects were: her daughters Praline 8 years old (drop height 45 cm) and Cookie, 5 years old (drop height 25 cm) and her husband, Chip (drop height 100 cm). Drop height was defined as the distance from suspect's hand to the floor.

As forensic scientists, teachers were asked to complete a blood drop analysis by creating blood spatter at heights ranging from 15-100 cm and measuring the diameter of the blood drops. Teachers were able to determine a mathematical relationship between the diameter of the blood drop and the drop height. Once this relationship is known, they were able to determine the drop height of the blood drops from the crime scene and identify who stole the brownies based on their drop height.

Teachers were able to determine the culprit based on these methods.

Preparation for the activity included created crime scene blood spatter using the drop height of the guilty suspect. Materials needed for this activity included:

- Wards Scientific simulated blood. (https://www.wardsci.com/store/product/10546902/blood-spatter-analysis-kit-introductory-and-advanced)
- Meter sticks
- Calipers
- Index cards
- Clip boards

For more information on blood spatter analysis or forensic science at Lawrence Tech University, please feel free to contact MDSTA board member LaVetta Appleby at lappleby@ltu.edu

Project-based Learning: A Powerful Pedagogy *by Tooba Mansoor*

Traditional Projects vs. Project Based Learning, *by Tooba Mansoor*

After studying data from peer-reviewed journals and reports from research institutions, I came to an understanding of how Project-Based Learning (PBL) differs from doing projects in a traditional classroom. PBL teaching practice has transformed traditional projects that we have previously done as students. In a traditional classroom, a typical content unit is covered with readings and worksheets from a textbook, lectures, short activities and labs, video programs, as well as webquests. Students are then asked to do a project on their own. For example, after the teacher has provided the content knowledge about biogeochemical cycles and how human activities can have an impact on the cycle, students are asked to create a poster, covering each stage of the cycle. These "projects" are exhibited in the classroom, however they are not formally presented or discussed in detail. The unit is then concluded with a test highlighting factual information that students must recall from their short-term memory (Mayer, 2012).

Unlike conventional learning where students apply what they have learned from traditional teaching, PBL is more rigorous and trains the young minds to develop 21st century competencies. These skills include critical thinking, problem solving, collaboration, creativity, and communication (Larmer & Mergendoller, 2010). In addition, students have an opportunity to use higher-order thinking and learn to work in teams to figure out the answer to the driving question provided by the teacher. For instance, the teacher poses an essential question, such as "How do changes in one part of the Earth system affect other parts of the system?" The teacher assigns the parameters, provides a standards rubric, and acts as a guide or facilitator for the project (Wrigley, 1998). Students then engage in research and inquiry to discover the answer and gain deeper understanding of the content. The final product is presented to an audience as a 3-D model, design, poster, infomercial, brochure, video clip, motion pictures, etc. This type of learning motivates students to solve challenging problems, gain meaningful understanding of the content, communicate, and be successful in real-world situations. The table highlights the differences between the traditional projects and PBL.

Traditional Projects vs.	Project-based Learning
• Teacher serves as "holder of Knowledge" • Project serves as a 'Capstone' at the end of a unit • Project is intended to supplement traditional instruction • Teacher-driven instruction, guided by textbooks • Teacher generates a plan • Short-term memory retention • Requires brief time period • Primary focus is on content • Prepare students for unit test • Often done at home individually • All students respond in the same way • Repeated year after year. • Students' choices and voices are limited • Often single-subject	• Teacher serves as designer, guide, and facilitator • Project is a 'work in progress' throughout the unit curriculum • Project serves as primary vehicle for student learning • Instruction is driven by the inquiry process • Instruction is guided by student-identified "Need-to-Knows" • Long-term memory retention, deep cognitive engagement • Requires longer period– can last weeks or even months • Focus is on both content and skills • Prepare learners for the real world situations beyond school • Often done in teams to figure out their own roadmap to solve the problem • Each team have a unique project result • Personally meaningful to students, • Students' choices and voices are applied to the project • Often multidisciplinary

Table. Comparison of 'Projects' in a traditional classroom and 'Project-based learning' classroom (Larmer & Mergendoller, 2010; Mayer, 2012).

References:

Larmer, J. & Mergendoller, J.R. (2010). The main course, not dessert: How are students reaching 21st century goals with 21st century project based learning? Buck Institute for Education. Retrieved from:http://www.bie.org/images/uploads/useful_stuff/Main_Course.pdf

Mayer, A. (2012). What is the Difference Between "Doing Projects" and Project-Based Learning?" Chart available on friEdTechnology. Retrieved from: http://www.friedtechnology.com/2012/11/whats-difference-between-doing-projects.html

Thomas, J. W. (2000). A review of research on project based learning. The Autodesk Foundation, Retrieved from: http://www.bie.org/index.php/site/RE/pbl_research/29

Wrigley, H. (1998). Knowledge in action: The promise of project-based learning. Focus on Basics: Connecting Research and Practice, 2(D). National Centre for the Study of Adult Learning and Literacy. Retrieved from: http://www.ncsall.net/index.html@id=384.html

Tooba Mansoor is a science teacher at Dearborn Center for Math, Science, and Technology and an MDSTA Board director. You can contact Tooba at mansoot@dearbornschools.org

Family Engineering *by Erica Ballard*

Cost of construction materials, conditions of work time and other constrains all factor in design and outcome of engineering projects. Audience was presented with a set of simple materials (pipe cleaners) and was asked to build the tallest, free-standing structure within time and other constrains.

You can contact Erica Ballard MDSTA board of directors member and MSTA liaison at emballard@mdsta.com

2015 Mini-grant Report: Water All Around Us *by Monica Faerber*

The purpose of the project was to expose students to different ways to use, test, clean and most likely one day use water as an energy source. Students are 6-8 grade at the Clark Preparatory Academy. The set of kits used in the activity come from Carolina Science. Students use the scientific method while working on these projects and upon finalizing experiments, students present results through reports, and science fair participation.

Monica Faerber is a science teacher at Clark Preparatory Academy, at Detroit Public Schools. You can contact Monica at fjag2025@aol.com

RACHEL BADANOWSKI

Science teacher, Ms. **Rachel Badanowski** was selected by the MDSTA board of directors to be named **2016 Ellen Daniel-Jones Distinguished Service Award winner**.

"Ms. Badanowski retired from classroom teaching in 2010 (…). She taught AP chemistry, chemistry, chemistry in the community, environmental science and forensic science. She also teaches teachers-to-be at Wayne State University and Michigan State University. She is involved with many science and teaching organizations." (www.mivhs.org)

Attendees were invited by David Bydlowski and Pamela Callaway to share their stories about working with Ms. Badanowski. Among those that spoke about her accomplishments were David Bydlowski and Pamela Callaway, Tooba Mansoor and Erica Ballard, and many of the friends and collaborators in attendance.

Tooba Mansoor, science teacher at Dearborn Center for Math, Science, and Technology: I had an opportunity to take a course with Ms. Rachel Badanowski at Wayne State University. She consistently encouraged and supported her students to become excellent future teachers. She taught us best teaching practices, provided us with unique content teaching ideas, and encouraged us to become involve in professional learning communities. I was inspired by her passion for teaching and learning. She always seemed to be the one who is willing to share her experiences with others.

Donald Jones, Former principal at Southfield High School (SHS), 1995-200 and 2004-2005: known and worked with Rachel since 1996 when he hired her as a teacher at SHS.

Dr. Clarence L. Stone, former principal at SHS says: "She was one of the best teachers I had the great pleasure to work with in my 34 years in education."

Ellen Daniel-Jones Distinguished Service Award

by Pamela Callaway

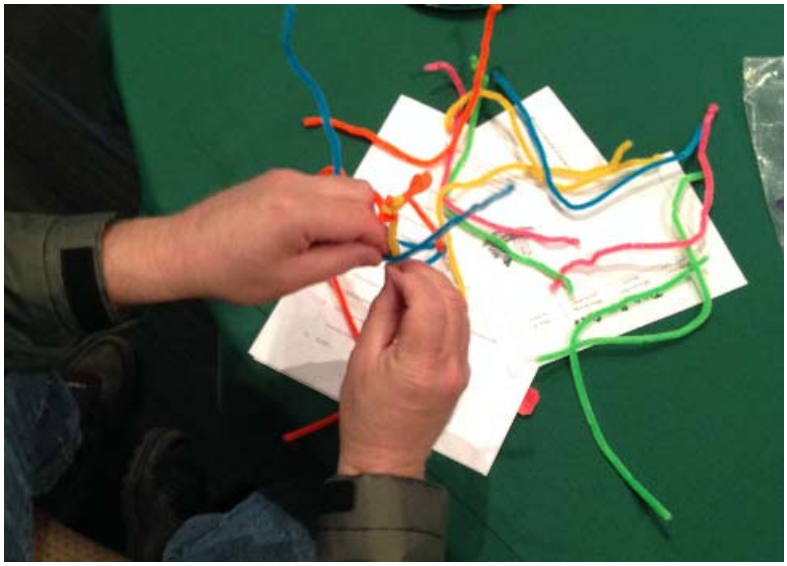
A devotion to children and learning… those words describe this phenomenal woman. She was extremely dedicated to education and professional in all her endeavors. Ellen Daniel-Jones (1942-2007) began her teaching career in the Detroit Public Schools System as a teacher in 1964, teaching in elementary and high school before leaving the classroom. She served as a science department head in 1987, and moved into the position of Science Curriculum Supervisor in 1994 where she continued to serve until her untimely passing.

Ellen prized learning. As a student at the Alger Elementary School, her love for science and mathematics were nurtured and developed. Ellen matriculated through the Detroit Public Schools, graduating in 1960 from Northwestern High School. Ellen's love for learning continued in college, where she received her Bachelor of Science degree from Michigan State University in 1964 and a Master of Education degree from the University of Michigan in 1976.

If you knew Ellen, you were keenly aware of her dedication, love, and untiring efforts to remain at the forefront of emerging techniques to provide the very best in classroom instruction for the students of the Detroit Public Schools. Ellen attended conferences and workshops across the state. She was passionate about education, devoting more than 40 years to the Detroit Public Schools. She mentored teachers in other districts. In 2004, she was presented with the MDSTA "Distinguished Service Award" in recognition of her outstanding and selfless devotion to the association, where she also served as Executive Secretary. She also enjoyed memberships in the Michigan Science Teachers Association and the National Science Teachers Association.

The Metropolitan Detroit Science Teachers Association recognizes the values, dedication and leadership of teachers who exhibit these qualities by awarding "The Ellen Daniel-Jones Distinguished Service Award", in honor of this phenomenal woman.

Photos:
May 10, 2016 - General Membership Meeting



Photos:
May 10, 2016 - General Membership Meeting

A Word from MDSTA President

Members as you close out your classrooms for the school year, please take time to remember the good days that you had with your students. Take time to remember the three Rs:

Reflect, Release and Relax.

Enjoy your summer!

Sincerely,

Cassandra Cayce
MDSTA President

Membership Benefits

Receive discounts to MDSTA conferences and workshops

General membership meetings in May

Receive e-blasts and e-newsletters

MDSTA

GRANTS

Apply for the MDSTA-Mini Grants:

There are up to six mini-grants awarded annually based on applications. Mini-grant requests for up to **$500**.

Nominate teachers for the MDSTA Outstanding Educator Award:

Nominate an educator for the Ellen Daniel-Jones Distinguished Service Award:

The qualifications for the Ellen Daniel-Jones Distinguished Service Award are leadership, service, and exemplary teaching for over 15 years.

Visit our site mdsta.org and follow the Grants/Awards tab or click on:
https://mdsta.wildapricot.org/Grants/Award

2016 Joint Fall Conference

Summer Is Here, Fall Is Next

While enjoying your first weeks of summer, we hope you are also making plans for fall. The **MDSTA** and **DACTM** (**Metropolitan Detroit Science Teachers Association** and **Detroit Area Council of Teachers of Mathematics**) are organizing a joint conference on **November 5, 2016** in Warren, Michigan and abstract submission is still open until **July 15, 2016**!

We are looking for educators across all area and grade levels of teaching science and math. Are you interested in sharing your exciting hands-on or project-based activities? Do you have curriculum updates that include STEM, NGSS or any other developments in the world of preK-12 education or teacher preparation? If you do, submit a proposal. A 60 minute (session) or 80 minute (workshop) are available. More information about location, topics of interest to our attendees, etc. can be found at the link below.

As an additional thank you for your participation your presenter registration is free and we will treat you to lunch and a small thank you gift.

Register: https://dactm.wildapricot.org/DACTM/MDSTA-Fall-Conference

Questions?

Valentina Tobos
MDSTA Presenter Co-Chair
vtobos@ltu.edu

Richard Strausz
DACTM Presenter Co-Chair
arpees@aol.com

LOCATION and DATE:
Warren Cousino Senior High School
30333 Hoover Road
Warren, MI 48093
Saturday November 5, 2016

Looking forward to see you there!

Looking forward to the Fall Conference 2016: Remember the SCECHs

by Barb Syrian

- The SCECHs are now awarded through the Michigan Online Educator Certification System (MOECS) and an online evaluation is required. The website for MOECS is www.michigan.gov/moecs

- The PIC (Personal Identifier Code) is a requirement on the Individual Application. Participants can get their PIC from the Michigan Online Educator Certification System (MOECS). Directions can be found on the website (http://www.misd.net/scech/index.html).

- The email address is also a requirement for participants to earn SCECHs. Be sure you write it clearly and completely.

- Participant fee ($10 payable to MISD)

- The policy of the SCECH program has been and continues to be that complete verifiable attendance occurs before the issuance of SCECHs. It's imperative that participants understand they must complete the entire program as approved. For clarity, participants cannot be late (no matter the excuse) nor can they leave early.

2016 MSTA Dan Wolz Clean Water Education Grant

by Pamela Callaway

During the spring Michigan Science Teacher Association (MSTA) meeting, one of our own MDSTA board members received the Dan Wolz Clean Water Education Grant: Connie Atkisson (left), MDSTA Board member and secretary and teacher in the Detroit Public Schools was present for the ceremony (also pictured Erica Ballard MDSTA board member and MSTA liaison).

For more on the MSTA grant visit:
http://www.msta-mich.org/?page=GrantsandAwards

Pamela Callaway is the MDSTA Executive director and a retired West Bloomfield science teacher. You can contact Ms. Callaway at pcallaway9@gmail.com

WANTED: Articles for Upcoming MDSTA Newsletters

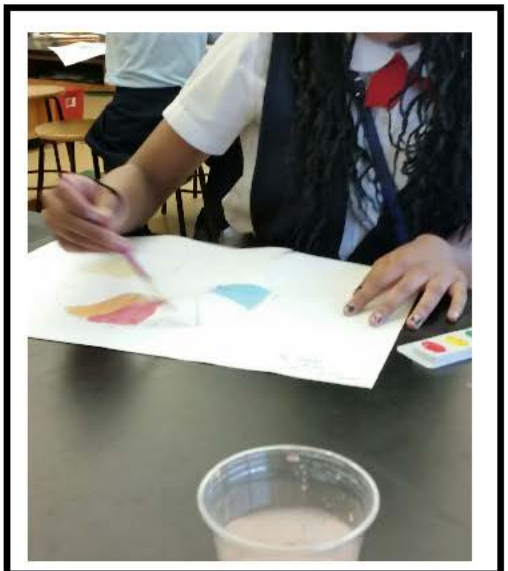
The Metropolitan Detroit Science Teachers Association wants to publish your articles in an upcoming issue of the newsletter. We are interested in articles on various science and education topics that are appropriate for the Pre-K-12 classroom. Your favorite lessons, updates to websites for teachers or interactive lessons, conference participation and cool ideas for reading are just the beginning. Let us know of upcoming events and we will share with the community!

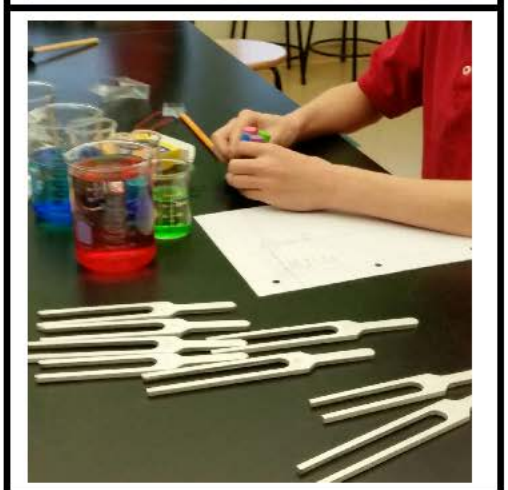
Send articles to newsletter editor Valentina Tobos at vtobos@ltu.edu

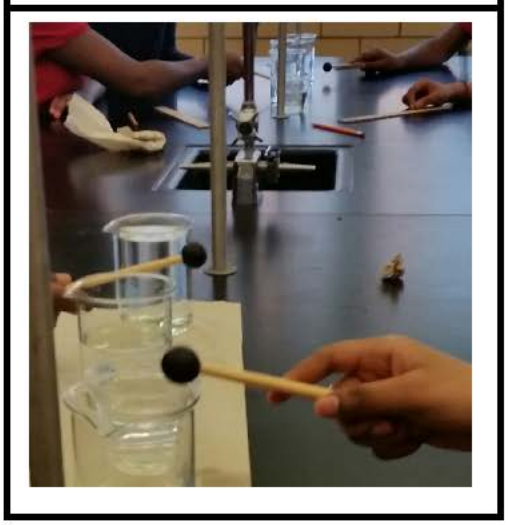
MDSTA 2016 MINI-GRANT

Sound STEAM Project

by Pamela Opolsky







I was recently announced to be the happy recipient of an MDSTA grant that allowed me to create an STEAM (science, technology, engineering, art and math) unit for my sixth and seventh graders. This diverse group of students was finishing a unit on waves. I have found that all students, including ESL (English as a second language) students benefit from hands-on learning. About half the school's population is made up of ESL students. Although a great majority of these students are creative, art is not offered at our school, so I wanted to find a way to bring in art, while reviewing what we learned in science.

On the first day of the project, students learned how to make a color wheel. Only 2 students had ever used a compass before, so most of the students learned to use a new tool. They had to use their math skills to create a 5 inch diameter circle. To do this, they needed to divide by two to find the radius to set their compasses at. They drew the circle in the middle of white construction paper. They drew a second, 12 inch diameter concentric circle on the same sheet. This created a ring that was then divided into 12 sections. Each section would hold a different color. Every fourth section (three in all) was labeled "primary".

The students were shown how to "paint" water onto one of the sections. This would help keep the watercolor paint in that section from bleeding over into the next, as well as allowing the construction paper to better absorb the paint. The three primary sections were labeled "red", "yellow", and "blue" and painted to match. It was explained that all colors can be made by those three colors. The section between red and yellow was labeled "orange". The section between yellow and blue was labeled "green", while the section between blue and red was labeled "violet". They were also labeled "secondary", and then painted by blending two primary colors together. The remaining sections were labeled "tertiary". The section between red and orange was labeled "red-orange" and painted by mixing red and orange together. The blending of a secondary and a primary color was used to paint the rest of the sections-yellow-orange, yellow-green, blue-green, blue-violet (which was labeled indigo) and red violet.

It took two days to create the wheel. This included discussing the wheel and working on a comprehension worksheet. The students were asked to think of how the color wheel compares to the visual light spectrum. Several made the connection that it resembles a rainbow, or the acronym they learned - Roy G. Biv. This stands for the order of the color of the visible light spectrum, which would be red, orange, yellow, green, blue,

indigo and violet. Knowing how to blend colors would help them in the next portion of the project.

On the third day, pairs of students were given three 400 ml beakers and three 100 ml beakers. The class decided on a standard in which to measure the height of the beakers. They wanted everyone to measure from the bottom of the beaker to where the curve of the spout started. The beakers were being used as containers, not to measure liquids. The beakers were measured with rulers. This height was divided in three. The answer was added together to give a third measurement. This way one beaker would have water to say, 33 cm, one to 66, and the third would be to 99 cm. After all the beakers had water to the different measurements, food coloring was used to color the water. The students had to color the beaker water with two different primary colors, two with two different secondary colors, and two different tertiary colors.

The following day, student pairs were given a set of tuning forks, along with a mallet. They were shown how to use the tuning forks. They were given an opportunity to listen to the tuning forks and how the beakers sounded when tapped. Students discussed where everyone would tap the beakers, and it was decided to be under the waterline, as opposed to the rim of the beaker or above the waterline. Next, they helped each other find the pitch of the water by comparing the sound to the sound of the tuning forks. They created a table to list their data. After matching the pitch of the beakers as closely as they could to the tuning forks, they were challenged to create a song together. It was stressed that music is sound that is pleasing to the ear. Instead of writing down notes, they would use colored pencils to draw small circles on a piece of paper. For instance, one tune might be written as blue, blue, yellow, green, blue, blue. This would mean that the beaker with blue water would be tapped twice, then the yellow, followed by the green beaker, and the blue beaker would be hit twice again. After recording their song in this way, they could ask someone else to play their tune.

This unit was a lot of fun for myself and my students. They reviewed science concepts while using math, learning how to use new tools all while having an opportunity to be creative. I think that next year when I do the unit again, I would have the pairs try to recreate a known tune such as “Mary Had a Little Lamb”. Pairs that meet this challenge and have left over time could then try to compose their own tune. It would also be nice to pull in more technology to have students record their songs to listen to.

I am grateful to MDSTA for granting me the funds to buy such a large amount of beakers and tuning forks. I feel the students were engaged and that the project was successful. It was wonderful to have all the equipment that I needed for the whole class to do the project at the same time. I think that having this activity as a center would have been too distracting and time consuming. Since I teach kindergarten through seventh grade science, these tools will be used often in various ways, so in a way, the whole school benefited from this grant.

Pam Opolsky is a MDSTA member and the 2016 recipient of a MDSTA mini-grant. Contact Pam at: pamopolsky@aol.com

Thirkell Science Students Make Waves

by Connie Atkisson

As a science teacher, I truly believe that science should be experienced, not just read about. It can be hard when you lack 'stuff', but we make it work. My passion is environmental science and I use it to help teach students how to make a difference in their local community. I want each person to see that ONE person CAN make a difference. Thirkell's DAPCEP (http://www.dapcep.org) students have done just that and even taken it to the next level. DAPCEP is a precollege engineering program present in some Detroit schools and available to all students in the tri-county area on weekends, several times a year. It is an amazing program which inspires students to grow beyond their dreams and explore science.

My little band of amazing students went beyond their dreams this year. We did many projects involving water quality, including testing students' home water for drinking water quality, and even tested Flint residential water for some of their own citizens. Twenty two students entered the Metro Detroit Science and Engineering Fair this past March. This fair is the largest competition in the country and if you place well, you know that you have achieved a worthy goal. Thirkell students placed in the first and second place, with one young lady going beyond that to a second place gold award winner.

Nia Patton shared her project at the DAPCEP Gold Award Winners Banquet in May and enjoyed the perks that came with being in the top 10% of all projects entered in the entire Fair. This is a prestigious award and a real opportunity for each student. They were treated to a short inspiring speech by Mrs. Alycia Merriweather who challenged each student to become "Why notters" instead of "yes butters" and to make their mark in the world. Nia's favorite part of her project was seeing which brand of diet soda would plume the highest!

Thirkell DAPCEP students didn't stop at the COBO Hall Science Fair. We believe we should work on projects that can eventually solve community issues and discover ways to correct them. Several students worked on water quality projects such as urban rivers and pollution, Flint water quality, bottled water versus tap water and many ideas in between. As a school, we have been working with GLOBE, an environmental arm of NASA where students and scientists can work with each other and collaborate with students around the world (http://www.globe.gov/web/guest/home). One of my students collaborated with schools in Croatia and in Texas for her project. She was comparing light temperatures at different latitudes around the planet. How very cool (or hot) was that! GLOBE, however, does a conference where students can share their projects with scientists and others in the community and gain feedback and direction from professionals in the field. This year, for the first time ever, they held a regional conference in our area for students from several Midwest states including Ohio,

Michigan, Indiana, Illinois, Wisconsin, and Minnesota. Nine of my students were able to participate in this program. Six from Thirkell and three from an afterschool science program I organize in the Monroe County area. These students were able to have their projects digitalized, like scientists do when they present their projects. It was so exciting to see their expressions as their digital projects were printed! Out of all these states, two of our students placed in this competition. Sam Shack received the Director's Award, as it was felt that he represented the Spirit of GLOBE throughout the entire program. No one was aware that this was even being given. One of the scientists said to me later that he was speaking with Sam while they were eating pizza and he asked him what he did for fun. Sam told him that he played basketball and did GLOBE for fun. The scientist was really impressed with Sam and how he participated fully in all the opportunities available that weekend. Sam was so surprised! Gavin Atkisson received third place in the middle school division for his drone project that explored pH levels in an air column. Both students have an opportunity to attend the National Conference held in Colorado this summer, if funds can be raised.

The group picture shows those in attendance at the GLOBE Regional Conference held at the University of Toledo. I am so very proud of all my students who attended this wonderful weekend. We all enjoyed the dorm stay and certainly were well fed there! Even my 'bottomless pit' students found they too, could be fully satisfied after eating!

Connie Atkisson is a MDSTA board secretary and a science educator at Thirkell, Detroit Public Schools. Contact Connie at: conniecoolest@aol.com

A version of this article was published by NASA's program THE GLOBE.

Legos and Rockets

by Connie Eisenhart

"In their eyes, it's a toy. In their hands, it's a tool" Legos are a wonderful tool for students of all ages to explore, engage, and learn through interacting with others and themselves. On May 18th Guardian Angels Catholic School held a workshop for K-2 students. Each student received a bag of Legos to build something that can be found in the water, on land, or in the air. They shared their ideas with each other. They took home their bag of Legos at the end of the night. This was a wonderful experience of STEM practices at a young age.

3- 2 -1 BLASTOFF! This past weekend, Academy students from the Rocket Club went to Sandusky, MI to launch three rockets. It was a great success. Each rocket had different payloads. We made a video of the take off with one of the payloads. The rockets the Academy students build are high power rockets. They can reach an altitude of 3,800 feet, and start off at a speed of 320 miles per hour. GREAT DAY!

Connie Eisenhart is a science teacher at Guardian Angels Academy and the treasurer of the MDSTA Board of Directors. Contact Ms. Eisenhart at: eisieinsect9@yahoo.com

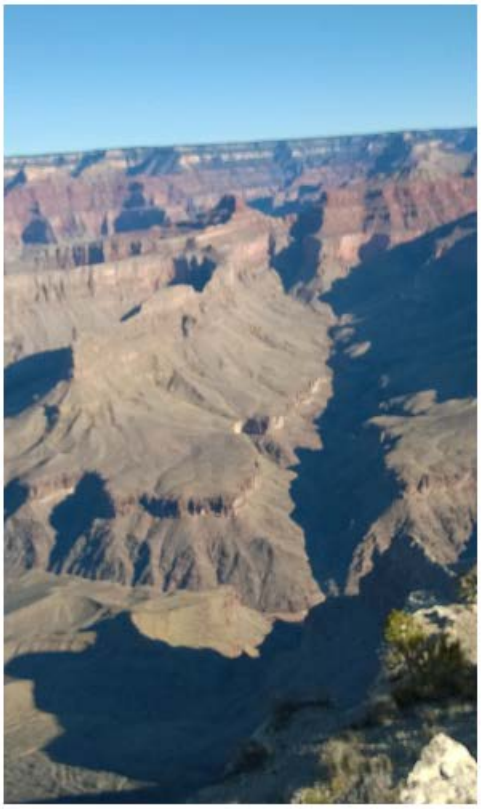
The Grand Canyon of the Pacific

by Marilyn Rands

Kauai, Hawaii is the location of Waimea Canyon which is referred to as the "Grand Canyon of the Pacific". How does it compare to the Grand Canyon in Arizona?

Waimea Canyon is about 10 miles, or 16km, long while the Grand Canyon is 277 miles, or 433 km long. Waimea Canyon is about a mile wide while the Grand Canyon widest distance is 18 miles (28 km). Waimea Canyon's deepest point is 3,000 feet (900 m) deep and the Grand Canyon's deepest point is 5,200 ft, or 1.6 km deep.

Okay, clearly the Grand Canyon is longer, deeper and wider but how do they compare visually? Well, the Waimea Canyon has a climate that has a relative high rainfall and the Grand Canyon has a very dry climate. This means that Waimea has lots of greenery and the Grand Canyon does not. See for yourself (pictures Marilyn Rands and Tania Velinsky). Left: Waimea Canyon, Hawaii. Right: Grand Canyon, Arizona.



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Send articles to Valentina Tobos at *vtobos@ltu.edu*

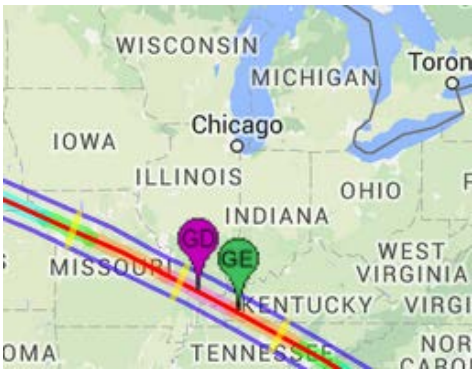
Science Surfing *by Marilyn Rands*

NSTA Website Summer Survey

Please take a moment to let us know how easy or difficult it is to find things on our core website (www.nsta.org) and how easy or difficult it is to use our search function: https://www.surveymonkey.com/r/PQY5WH5

2017 August 21 Total Solar Eclipse

http://www.eclipse2017.org/xavier_redirect.htm



A total solar eclipse that is visible in the United States does not occur very often. Now is the time to start planning if you wish to see it. Remember all plans are weather permitting. There are several website that give information for your planning. It will not be visible in Michigan, so you do need to travel to see it.

This site has an interactive map that shows the path. The site also contains information about what is an eclipse, how to prepare for it, graphics and maps, and links to all the communities that are in the path of total eclipse. (Picture link: http://eclipse.gsfc.nasa.gov/SEgoogle/SEgoogle2001/SE2017Aug21Tgoogle.html)

For Music Lovers

https://www.youtube.com/embed/XKRj-T4l-e8

Toccata and fugue in D minor by Bach played on a glass harp.

Wave Behavior

http://livephoto.rit.edu/LPVideos/Slinky/

If you don't have a long slinky to use to demonstrate wave behavior here is a video that uses a slinky to show a transvers wave, reflection of that wave from a "hard" boundary, two waves traveling in opposite directions, and a longitudinal wave.

Newton's Third

Tabletop demo

https://www.youtube.com/watch?t=63&v=mFQ7jy4dJP4

Disclaimer: At the time this newsletter was assembled, these sites were active.

Marilyn Rands is an emeritus associate professor of physics at Lawrence Technological University and a former (very-long-term) MDSTA board member. Contact Marilyn at: mrands@ltu.edu

Science Matters

New Michigan Science Standards

You can download a copy of the new Michigan Science Standards at: http://www.michigan.gov/documents/mde/K-12_Science_Performance_Expectations_v5_496901_7.pdf

NSTA New Science Teacher Academy

Is a yearlong program focused on encouraging and supporting early-career science educators. Thirty four early career teachers will be selected as fellows to receive a comprehensive NSTA membership package, online mentoring with trained mentors who teach in the same discipline, the opportunity to participate in a variety of web-based professional learning activities and financial support to attend the NSTA 2017 National Conference in Los Angeles. Deadline for submission is August 5. Learn more at http://www.nsta.org/academy.

One Shared Space

The American Geosciences Institute invites educators and their students, formal and informal, to form teams to enter the **One Shared Place** video contest. Teams submit a 30-90-second original video that tells viewers about an outdoor place that is special to them, including relating the place to elements of geoheritage and geoscience. **Submission Deadline: August 16, 2016.** Learn more at http://www.earthsciweek.org/one-shared-place.

The National Science Teachers Association (NSTA) offers a variety of fun and friendly **competitions** for both teachers and students. Please visit:
http://www.nsta.org/about/competitions.aspx
Complete list of **grants**, provided by the National Science Teachers Association. To view this list, please visit:
http://www.nsta.org/publications/calendar/
Free **grant** finding resources for educators and educational institutions, just visit:
http://www.getedfunding.com
The National Science Teachers Association's **Freebies** for Science Teachers webpage. Check it out regularly at:
http://www.nsta.org/publications/freebies.aspx

July 27 - 29, 2016: STEM Form and Expo Hosted by NSTA. Please visit:
http://www.nsta.org/conferences/stem.aspx
February 23, 2017: Introduce a Girl to Engineering Day. Please visit:
http://www.discovere.org/our-programs/girl-day

Science Matters is an initiative from the National Science Teachers Association that promotes quality science education, resources, and professional development opportunities. Each state has a Science Matters Coordinator whose primary role is to be the point of contact for distribution of science resources and opportunities to the state network. Your state coordinator is *David Bydlowski*.

To subscribe to the Science Matters Network in Michigan e-blast, contact:
davidbydlowski@me.com

David Bydlowski is Michigan Coordinator—Science Matters Network and MDSTA webmaster

In Other News

Mark September: Nominate TOY

End of September will open the nominations for Teacher of the Year (TOY). The MI.gov site below will have information and forms for both Michigan and national nominations: http://www.michigan.gov/mde/0,1607,7-140-6530_13651_38018--,00.html

2016 TOY Science Finalist

State-level finalists for the Michigan Teacher of the Year Award (TOY): Mrs. Emily Pohlonski, science teacher, Novi High School, Novi Community Schools, http://www.michigan.gov/mde/0,4615,7-140--354619--,00.html

Environmental Education Program Links

http://www.michiganplt.org/
http://maeoe.org/

Read a bounty of science news and watch video clips at:

http://science.nasa.gov/

American Modeling Teachers Association (AMTA)

The 2016 Modeling workshops are listed on the AMTA website (including inks to applications):
http://modelinginstruction.org/summer2016-workshops/
as well as on the PhysTEC site: http://www.phystec.org/pd/?set=Modeling
Workshops are offered in about 20 states, in the content areas of physics, (semester I and II), chemistry (semester I and II), biology, physical science and middle school.
If you have questions, please contact Wendy at wendy@modelinginstruction.org

- **Location: SE Michigan**
  - Physics E&M - Dates: June 21 - July 8
  - Chemistry - Dates: July 25 - Aug 12
- **Location: South Central**
  - Physics – Dates: July 11 – 29
- **Location: South West Michigan**
  - Chemistry – Dates: July 18 - Aug 5
  - Middle School – Dates: June 27 - July19
- **Location: North Central Michigan**
  - Biology –Dates: June 20 - July 8
- **Location: Upper Peninsula Michigan**
  - Biology – Dates: July 11 – 29

Registration: http://www.mimodelinginstruction.org/ , for in-state teachers only

- **Location: Genesee Intermediate School District**
  - Physical science – Dates: July 18-Aug.5
  - Contact James Emmerling: JEmmerling@geneseeisd.org

Who is hiring Physics Bachelor's?

https://www.aip.org/statistics/whos-hiring-physics-bachelors

NSTA 2016 Summer Institute

http://www.nsta.org/conferences/summer3.aspx
Implementing Next Generation Science Standards
Michigan Science Center • Detroit MI • Monday, August 8, 2016

Other Important LINKS

Science Associations

MDSTA Home page: www.mdsta.org
MSTA (State organization): www.msta-mich.org
DACTM (Mathematics): www.dactm.org
AAPT Committees lists: www.aapt.org/Resources/lists.cfm
MI – AAPT (physics): web.miaapt.org
NABT (biology): www.nabt.org
AACT (chemistry): www.acs.org/content/acs/en/education.html

Upcoming Meetings

ACS
August 21-25, 2016 National Conference, Philadelphia, PA
Please visit: *http://www.acs.org*

AAPT
July 16-20, AAPT 2016 Sacramento, Ca
Please visit:
http://www.aapt.org/Conferences/meetings.cfm

MI-AAPT
2017, TBD, MI
http://web.miaapt.org/home

DMAPT
Contact for info:
rsvp@dmapt.org

NABT
NABT 2016 Professional Development Conference, November 3-6, 2016, Denver Sheraton-Downtown, Denver, CO
Please visit:
http://nabt.org/websites/institution/index.php?p=10

MSTA
March 24-25, 2017: MSTA 64 Annual Conference Novi, MI.
Please visit:
http://msta-mich.org

NSTA
March 30-April 2, 2017, Los Angeles, CA.
Please visit:
http://www.nsta.org/conferences/

MDSTA
November 5, 2016, Cousino High School, Warren, MI
Please visit:
http://www.mdsta.org

MACUL
March 15-17, 2016, Cobo Center, Detroit, MI
Please visit:
http://www.mdsta.org

MAEOE
October 14-16, 2016, Hickory Corners, MI
Please visit:
https://maeoe.wildapricot.org/event-2269909

2016 MDSTA Board of Directors

LaVetta Appleby – *Director*
Connie Atkisson – *Secretary*
Erica Ballard – *MSTA liaison*
David Bydlowski – *Web Administrator*
Pamela Bentley Callaway - *Executive Director*
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Margaret Griffin – *President-elect*
Tooba Mansoor - *Director*
Debby Peters – *Membership Registrar*
Valentina Tobos – *Newsletter Editor*
Kelvin Wise - *Director*

2016 - 2017 Scheduled Meetings of the MDSTA Board

You are welcome to attend all MDSTA Board Meetings. Most meetings are held at **Lawrence Technological University, 21000 West 10 Mile Road, Southfield, MI, 48075 (**map**)**. Meetings take place the second Tuesday of the month.

September 13
October 11
November 5 – Joint Conference

Come Join the MDSTA Board of Directors Team!

Are you interested in joining a team of dynamic education professionals from the metropolitan area? Become more involved by considering being on the board of directors of the MDSTA. We are looking for all levels of teacher education, from pre-K to higher education, both pre- and in-service, retired teachers and administrators. All professionals from the tri-county public, charter, or private schools may participate. Home school educators are very welcome too.
Submit your name and contact information to:

Pamela Callaway, executive director
mdsta.exhibits@gmail.com

Liaisons NEEDED: we are looking for individuals that can play a liaison role between MDSTA and other local and regional teacher organizations such as: ACS, DACTM, MABT, MACUL, Michigan Science Center, MSELA, MESTA, AAPT, and others. Contact mdsta.exhibits@gmail.com if interested.

Newsletter

Consider sending articles, teaching materials, photos, student work and other science and general education information to be included in the **MDSTA newsletter**. The letter is e-published during the months of February, June and October. Any news should be sent to Valentina Tobos, MDSTA board member, newsletter editor. An archive of recent newsletter can be found on our main web page at: www.mdsta.org, under the tab named NEWS. Please send all materials to vtobos@ltu.edu

MAILING ADDRESS

Metropolitan Detroit Science Teachers Association
MDSTA -- P.O. Box 111
Southfield, MI 48037

For newsletter news email us at: *vtobos@ltu.edu*