



△ Center Line △ Clintondale △ Fraser
Cousino △ Fitzgerald △ Lake Shore △ Lakeview
The CENTER PAGE
△ Lakeview △ South Lake △ St. Clair △ Warren
Mott △ Sterling Heights △ Warren Woods △

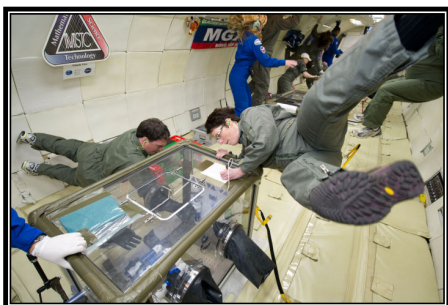
Volume XIII No. 2

Macomb Mathematics Science Technology Center

2011-2012



MMSTC's NASA Adventure MicroGravity eXperience



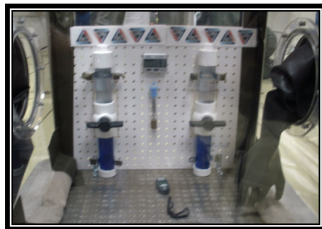
This year MMSTC was chosen as one of seven teams in the nation to participate in the NASA **Teaching From Space Micro GX** program. Student and teachers worked together to conduct research on the formation of convection currents in a microgravity environment. The project started in October when the 11th grade students began to do background research on the causes of convection to determine if currents will form in microgravity environment. See our Fall Newsletter for more details on convection currents. Based on research done in IDS and experiments done in Physics, they formed two different hypotheses and presented these to the rest of the school and the families who attended the 8th grade open house in December.

PRE-FLIGHT PREPARATIONS

The junior team then began to design and test an experimental design that would be used to investigate the hypothesis. The design had to meet NASA standards and safety guidelines, for example: total equipment was limited to 40 lbs and all liquids needed at least two levels of containment. The entire experiment needed to fit within a specific "glovebox" for the duration of the Zero G flight, and each trial needed to be completed in a 20 second time frame. Students ran preliminary trials in Mrs. Duddles' IDS class with the help of Mrs. Hilliard and her lab equipment.



During this time the teachers involved participated in weekly online classes via Collaborative Blackboard with NASA personnel and the other six teams across the country almost every Monday evening October through April. They participated in academic discussion boards and earned incentive points for NASA rewards to share with students which included posters, calendars, activities, books and food packaged for consumption on the International Space Station (ISS). The professional development included curriculum activities that teachers incorporated into many different classes.



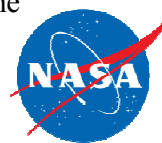
The final experimental design consisted of clear PVC tubes with a valve in the center that separates hot, blue colored water and clear ice water. The “convection tubes” were placed in a vertical stand and the valve would be opened during a “zero g” portion of the flight.

FLIGHT WEEK

During the first week of February, **Mrs. Cybulski, Mrs. Kincaid Dewey, Mrs. Duddles, Mrs. Hilliard and Mr. McMillan** traveled to the Johnson Space Center in Houston, Texas. While in Houston, the team from MMSTC participated in several activities, such as a VIP tour of the Space Center including the Neutral Buoyancy Lab, Building 9 (contains the vehicle simulators for astronaut training), a visit to the ISS Mission Control and Apollo Mission Control. They also worked very closely with NASA engineers and spent time with several astronauts who have performed missions on the ISS and the Space Shuttle.



Prior to the flight, the team had to conduct a Test Readiness Review where the experimental process is presented to NASA engineers, advisors and safety technicians (17 in total!) for final flight approval. They also participated in physiological training to learn how to prepare for rapid changes in gravity. The scheduled flight was delayed for two days, but on the final day of the trip the teachers finally boarded the plane to conduct the trials.



The modified DC-727 flew over the Gulf of Mexico and performed 30 “parabolas” to simulate a weightless environment. At the apex of the parabola the plane begins accelerating downward in freefall. During this portion of the flight the passengers and cargo were weightless for about 25 seconds (micro-g). At the bottom of the parabola, the plane would then accelerate upwards and the passengers and cargo experience an acceleration of 1.8g and feel almost twice as heavy for about 30 seconds. The plane descends and rises almost 2 miles during each parabola.

POST FLIGHT ANALYSIS – CONVECTION CURRENTS FORM IN MICRO G!

Each trial was video recorded for MMSTC students to analyze the data and to put together a final report. The juniors used Vernier LoggerPro video analysis tools to measure the rate of vertical displacement for the hot water and compared this rate to the vertical displacement during the trials students conducted at 1 g. It was determined that the warm water did rise at rate of 0.5 cm/s in microgravity. This is much slower than the rate of 1.5cm/s in 1g. Due to the fact that the rate of displacement did NOT correlate with difference in temperature, it is believed that the vertical displacement was caused by the difference in pressure in the warm portion of the convection tube and the cold portion of the tube.

OUTREACH AND THANKS

In addition to our students and parents, teachers will share their NASA experience with other teaching professionals at MCTM, DACTM/MDSTA and MIAAPT conference. Team members visited an area preschool and will present at an upcoming WCS Board of Education meeting. See the NASA section of the MMSTC website for more information and photos.

The NASA team members would like to thank the students, staff and administration at MMSTC for their hard work and effort in this project. The NASA Teaching From Space Office has contacted MMSTC and expressed their desire to use the MMSTC implementation of the MicroGX project as a model for future participants. This is quite an honor for WCS and everybody involved in the project.



MMSTC SCIENCE SYMPOSIUM: CLASS OF 2012

On Wednesday, January 24, 2012, senior research projects came to an end with the annual MMSTC Science Symposium. The seniors presented their research and answered questions for industry professionals, engineers and university professors. A winner was chosen in each subject area and an overall winner was chosen from the subject winners. The symposium represented the culmination of four years learning and hard work for the students. Although this event closes a chapter in the senior MMSTC experience it is our hope that these amazing students will be able to look back on this time in their academic career and utilize these skills through out their lives. We would like to thank all of our symposium judges for taking time out of their lives to enrich our program with their knowledge and experience as well as to celebrate the accomplishments of our outstanding senior class.



Chemistry 1st Place / Grand Prize Winner

Catherine Buchanan -- *Warren Mott HS*
John Drabik -- *Warren Woods Tower.*

The Effect of Cow Urine and Its Components as a Fire Retardant on Cotton Fabric

The purpose of this experiment was to test whether cow urine and its individual components had any effect on the fire retardant properties of cotton fabric. The components of cow urine tested were urea, potassium, phosphate, and sodium chloride. This experiment had real world relevance in that it explored the area of less hazardous and less deadly fire retardants. Modern fire retardants are known to cause cancer and other serious health problems; this experiment was an attempt to find an organic fire retardant that would replace the main-stream carcinogenic fire retardants. In this experiment, five different treatments along with a control were used to test their fire retardant properties. The time that embers appeared and the total consumption time for treated pieces of fabric were measured. Along with the analysis of variance (ANOVA statistical test) the observations further concluded that the ammonium phosphate was the best fire retardant, followed by sodium chloride and potassium chloride.



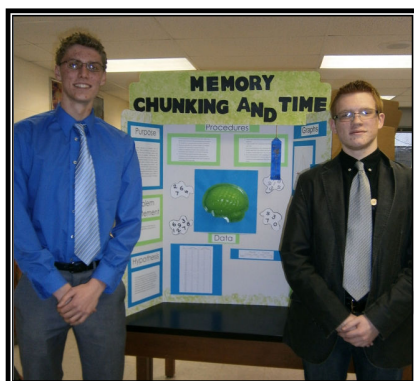
Physics 1st Place

Carl Chan -- *Cousino HS*
Oles Synyutka -- *Warren Mott HS*

Maximizing the Lift on an Airfoil Using Upper Camber Height, Wing Texture, and Angle of Attack

The purpose of this research was to find a combination of a wing's upper camber height, texture, and angle of attack that would maximize lift. A three-factor design of experiment (DOE) was conducted to determine the effects of the three individual factors and the interaction between them. During the experiment, an airfoil was connected to a force sensor and placed inside a wind tunnel.

When the wind tunnel was powered on, the force sensor measured the lift exerted on the airfoil. The airfoil with a low camber height, smooth texture, and high angle of attack produced the greatest amount of lift. Because of inaccuracy suggested by the large range of standards, the only variable deemed significant was the airfoil's angle of attack. As the wing's angle of attack increased, the average lift exerted on the airfoil increased significantly. The results of this experiment could be applicable in the transportation industry. With the ongoing unpredictability of oil prices and availability, it is imperative to create more efficient airplanes to keep up with public demand. Designing wings that produce more lift could decrease the cost of flight and help preserve this crucial mode of trade and transportation.



Biology 1st Place

MacKenzie Krolczyk -- *Cousino HS*

Zachary Smith -- *Sterling Heights HS*

Memory Recall in Relation to Chunking and Time

Short-term memory is the summation of instant knowledge. It consists of bursts of information that are stored only long enough to be used and then forgotten. This form of memory is used often in memorizing and then transferring information to a physical form—such as

copying a few words or writing down a phone number. The purpose of this experiment was to discover the peak number of units that can be stored over the short-term by comparing two conflicting theories on the subject. A population was presented with seven numbers in straight sets and in chunked sets. The participants were to view the numbers for varying times of five or ten seconds and were then given 30 seconds to write down all seven numbers, in order, as accurately as possible. The number of correct in each group of time and set type were compared in two two-proportion z test. Our results were consistent with that of George A. Miller's experiments and theory showing that the optimal number of units for short-term memory is seven plus or minus two.

Detroit Science Fair Gold Award Winners

Top 15% of participants at the Science and Engineering Fair of Metropolitan Detroit



Catherine Buchanan, *Warren Mott High School*;

John Drabik, *Warren Woods*

Lydia Feld, *Sterling Heights High School*;

Kristine Gallis, *Cousino High School*

Ashley Gerbics, *Fraser High School*,

Corinne Anderson, *Lakeshore High School*

In addition to being MMSTC Grand Champions, Catherine and John's project is the Team Project Winner of the **55th Annual Science and Engineering Fair of Metro Detroit** and Intel® International Science and Engineering Fair qualifier. They will be traveling with Mrs. Hilliard to Pittsburgh, PA in May to compete.

Senior Stress Buster: Euchre!!



Seniors got a chance to get to know each other better, learn how to play euchre and burn off a little stress right before Thanksgiving break. The annual Senior Euchre Tournament was a friendly competition where formerly AM and PM students got a chance to mingle and have fun. A computer program (of course!) randomly assigned students to partners & tables in Mrs. Dewey's room and the time allotted went by quickly! Some teachers even got to sit in for absent seniors & dust off their euchre skills as well. Thanks to **Mr. Larry Ervin**, a retired MMSTC teacher who graciously comes in to substitute for absent teachers from time to time, for assisting by keeping us all on track for these timed rounds!! Earning top points were **Trent McDowell (Cousino HS)** and **Nua Nicaaj (SHHS)** and we promised we wouldn't mention the low scores! Many students played euchre for the first time – we can't send them off to college next year without this important skill!!

COUNSELOR'S CORNER – E. Brown THE POWER OF STUDY GROUPS

You may have noticed that when you're explaining something you've learned to a friend, you begin to understand it better yourself. This happens because when you explain an idea, you need to think more deeply about it.

The same principle makes study groups useful. Studying with others in a small group is helpful because you:

- Think out loud.
- Share ideas.
- Learn from one another.

In an effective study group, you and other students hash out lesson materials together- explaining concepts, arguing about them, figuring out why one person's answer differs from another's- and in the process, you most likely learn more than you would have studying by yourself.

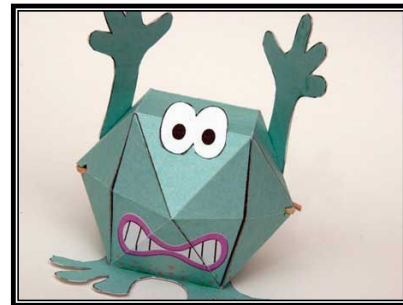
Group study offers other advantages in addition to gaining a deeper understanding of class material. These include the opportunity to:

- **Reinforce note taking.**
- **Share talents.** Each person brings different strengths, such as organizational skills, the ability to stick to a task or a capacity for memorization.
- **Cover more ground.** Group members may be able to solve a calculus problem together that none would have solved alone.
- **Benefit from a support system.** Members often have common goals, such as good grades. Each person's work affects the other members, which results in making members supportive of one another.
- **Socialize.** It's more fun to study with others; the give and take makes it more interesting. And because it's more fun, you spend more time studying!

By supplementing your individual study with a study group, you can reinforce what you've learned, deepen your understanding of complex concepts, and maybe even make a few new friends. Whoever said learning can't be fun?

Greetings!

My name is **Cuboctahedron Quasiregular Archimedean Solid**, but my friends call me Q-BOW. Every year, I strike feelings of elation and horror into the minds and hearts of freshman at MMSTC. This year was no exception. The class of 2015 got a chance to explore my volume (in three different ways) and surface area. They learned about the transitivity of my edges and vertices. They also got a chance to write an extensive paper detailing all of the above.



<http://tinypurl.com/d7l33h>

They are not my only fans. I have been mentioned throughout history, starting in ancient Greek times. In addition, I have guest starred on Star Trek. M.C. Escher has even sketched my image (twice!) Youtube has caused me to be quite the phenomenon with well over a million hits. Many a student has used me as their profile picture on Facebook at least once.

Alas, I must away! It is time to duel with my friend, Rhombic Dodecahedron. Good day.

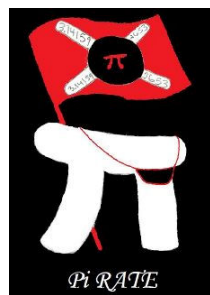
MMSTC SPRING SPIRIT WEEK ADDS FUN TO MARCH MADNESS!



The students and staff at MMSTC enjoyed a spirit filled week March 12th through March 16th. Monday kicked off the week with Space Exploration Day to connect with our NASA microgravity experience theme this year. Buzz Light Year and some friends were seen wondering the halls. Tuesday was designated to celebrate your Favorite Book Character.



There were a few Harry Potters in school on Tuesday, even Mr. Acre got into the fun. March 14th -- Einstein's birthday yes -- but also everyone's favorite spirit day because we all get to enjoy treats like apple pi, pizza pi and frosted π cookies (compliments of Mrs. Dewey) for Pi Day. Thursday was Duct Tape Day. It is always interesting to see the duct tape outfits created by our students; my favorite this year was the pink, purple and blue striped duct tape skirt – no longer is duct tape fashion limited to just silvery grey tones. Culminating the week was Class Color Day so the students from each grade could band together by their class color and challenge the other grades in a friendly basketball tournament. It was a spirited week and hopefully fun was had by all students and staff alike.



3rd Annual Pi Day Tee Shirt Contest

Extra, extra read all about it! This year marks the third year of the contest for BEST pi design. The overwhelming winner was **Noah Connor (Cousino)** with his pirate design! Noah, see Mr. Acre for your \$25 prize. Past winners: **Josh Hallock (Cousino)** with his pineapple design [2011] and **Carl Chan (SHHS)** with his modern art pi day design [2010].



Spirit Week Basketball Game Photos



MMSTC ENVIROTHON TEAM HEADED TO STATE COMPETITION!



After months of preparation, the Envirothon Team traveled to Lapeer with **Mrs. Kincaid Dewey** to participate in the Region 5 competition. Following a half day of informational, sometimes hands-on workshops on agriculture, aquatic ecology, energy, forestry, soils & geology and wildlife, **Dylan Twardy, Drew Martin, Nick Higgins, Noah Connor** (all

from **Cousino**) and **Rasika Patil (SHHS)** competed in the written contest. They placed third in the Region and 13th in the State, qualifying them to compete at the state level which takes place in May at Lake Superior State University in Sault Ste. Marie. Congrats to these juniors and sophomore!

This year's service project is a shoe drive for **Nike's Reuse-A-Shoe** program during the month of April. Athletic shoes collected will be recycled to create materials that are used in various sport and playground surfaces. See the graphic on the bottom of page 9 or the MMSTC website for more information.



Michael Drake (WWT) was recognized at the Michigan Society of Professional Surveyor's 71st Annual Meeting in Ypsilanti in February for being the **state winner** of the **Trigstar Contest** in 2011. Mike is pictured with his parents and **Craig Amey**, MMSTC Trigstar Sponsor.

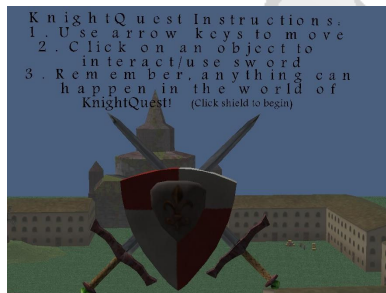


Programming – with a Twist!

This year the newly formed third quarter tenth grade IDS team of **Mr. Acre**, **Mr. McMillan**, and **Mrs. Hilliard** worked to maintain the integrity of programming at MMSTC by introducing a new platform for teaching computer programming. Mrs. Hilliard was introduced to this software by reading Randy Pausch's book *The Last Lecture*. Pausch describes his experiences as a professor at Carnegie Mellon University and how one of his PhD students wanted to make computer programming more accessible to primary/secondary students.

"Alice is a free innovative 3D programming environment that makes it easy to create an animation for telling a story, playing an interactive game, or a video to share on the web. Alice is a freely available teaching tool designed to be a student's first exposure to object-oriented programming. In Alice, 3-D objects (e.g., people, animals, and vehicles) populate a virtual world and students create a program to animate the objects."

In Alice's interactive interface, students drag and drop graphic tiles to create a program, where the instructions correspond to standard statements in a production oriented programming language, such as Java, C++, and C#. Alice allows students to immediately see how their animation programs run, enabling them to easily understand the relationship between the programming statements and the behavior of objects in their animation. Students gain experience with all the programming constructs typically taught in an introductory programming course." (alice.org).



During the tenth grade's four week experience with Alice, they were asked to create a variety of worlds. The most exciting project was the culminating activity of creating a gaming world.



Students programmed a world that instructed the player on how to play the multi-level game to demonstrate the various technical programming skills they learned.

Actuary Presentation to Class of 2013

The 11th grade Pre-Calculus classes learned about **Actuarial Mathematics** from some students at the University of Michigan. They gave a presentation about the coursework needed, the series of exams, the job outlook, and the salary for the profession. It is an excellent field to get into with nearly zero unemployment, good salaries and advancement opportunities. Coursework includes calculus, statistics, probability, and risk management. Students often take concentrations in economics, finance, and/or business. Job opportunities are in business sectors, health care, and insurance companies to name a few. The A.M. presentation concluded with some sample problems. **Daniel Shing (Cousino)** and **Eric Klug (Lake Shore)** solved the Prisoner's Dilemma. Unfortunately, Eric decided to take care of himself instead of cooperating with Daniel, and stole the prize for himself (instead of sharing it)!

**All the trig functions, there are nine,
With original's of tangent, cosine, and sine
All related in some way,
Learn them all...you better pray,
Once you do, you're sure to shine!**

Ashley Meerschaert 10B
January 4,

Sophomore FST students have the opportunity to use their creative writing skills to compose a mathematical limerick – after researching the parameters of limericks, of course! At right is one sample by Cousino student **Ashley Meerschaert**.

FRESHMEN BIOLOGY RESEARCH

The IDS, Math, and Science departments and students are happy to report that the freshmen data collection is complete! Students tested their original student-generated experimental designs with the greatest care given to detail. Students will now be required to professionally produce a presentation that communicates the findings of their semester long research project.

This year the ninth grade biology topics range from perfecting the factors to produce the most efficient **bio-fuel** to testing the temperature variations and how they influence the **germination of irradiated seeds**. Many of the students selected bacteria as their main topic of research. All of the research is sure to inspire some new scientific discovery. Again this year, students are required to find a **commercial application** for the research work that they complete.

Students will also prepare their first formal scientific research paper and presentation in IDS under Ms. Duddles' direction. Students will complete this task as well as prepare for the rigorous question & answer session that follows their research presentations. With the guidance of Mr. Acre students selected the proper statistical analysis to support their findings. Ninth grade students carried out their data collection with great professionalism making this year's experimentation the best yet.

Projects are scheduled for completion during late May and presentations commence immediately. The entire MMSTC community congratulates the freshmen class on a job well done!



ENVIROTHON FUNDRAISER PRIZE WINNER!

To raise money for project and travel costs, MMSTC's Envirothon Team sponsored a fundraiser in November. Those who made a \$5 donation had a chance to win 4 tickets to the **Detroit Red Wings** vs. Carolina Hurricanes (Section 115 Row 1 Seats 8-11) game on Saturday March 24th Joe Louis Arena. MMSTC Senior **Mike Freckleton** (Cousino) was the lucky winner!



Envirothon Service Project Info→

ReUSE A SHOE

WORN OUT. PLAY ON.

Want to make a difference?
Then quit talking trash and take action.
Toss out your old kicks at our shoe drive, and Nike ReUse-A-Shoe will recycle them into new places to play-like playgrounds, running tracks and more.

HOSTED BY: MMSTC Envirothon Team

WHEN: Now - April 25, 2012

WHERE: Drop Off Outside Media Center

SHARE YOUR PHOTO, AND VIDEO AT [FACEBOOK.COM/NIKEREUSEASHOE](https://www.facebook.com/nikereuseashoe)

GRANT FUNDS STUDENT BIRDHOUSE PROJECT



Students and staff are working on an exciting Engineering and Design project made possible by a **MEEMIC grant awarded** to MMSTC Interdisciplinary Studies (IDS) teacher **Mark Supal**. The project incorporates the engineering design process in the research, design, and construction of habitable birdhouses for local bird species.

First, the **Senior Class of 2012** will research and design birdhouses (using SolidWorks, a computer-aided design (CAD) software) suitable for specific bird species who nest or are native to our local area. Each design will accommodate the needs of a specific species of birds as well as house an IP network camera. Students will also write a research paper about their bird species & present a justification for their design to their peers and IDS teacher. Five or six of the best designs will be chosen for construction.

Next, using the chosen SolidWorks birdhouse designs, a group of twelve MMSTC underclassmen will construct the birdhouses under the guidance of Mr. Supal and IDS teacher Mrs. Duddles during a summer enrichment workshop to be held at Butcher Community Educational Center in June 2012.

Finally, the constructed birdhouses fitted with IP cameras will be made available to the Warren Consolidated Schools' family of elementary and middle schools for use in classroom instruction or enrichment projects. A birdhouse equipped with a camera can be a powerful tool for data collection since students will be able to directly observe biological functions in real-time. Students may complete studies in topics such as nesting, feeding habits, growth rate, and sibling interaction. Studying how bird habits are changing due to global warming is a hot topic in the research community.

MMSTC underclassmen who wish to participate in the summer build workshop can sign up with **Mrs. Duddles** in Lab A/ Room 143. Pizza, fun and learning guaranteed!

MMSTC'S GOT TALENT!

Students – and More -- Share Performing Arts Skills at Talent Show!

We 'do' more than math, science and technology here at MMSTC! On March 8th, students, parents and guests spent an evening enjoying a wide variety of talents! Acts ranged from singing and instrumental performances to demonstrations of juggling and dog training! The program closed out with a memorable performance by MMSTC's own 'Fab Four's' rendition of the music video "A Million Ways" by OK Go! Students from all grade levels participated as well as alumnus **Lyndsey Reich (MMSTC & Lakeview '09)** who played a violin/flute duet with **Mrs. Kincaid Dewey** and our own **Dr. Neuhoff's** gorgeous German Shepherds Emma and Charlie! Bravo to the students listed below in their roles as performers, MCs, stage crew and volunteers!

Josh Denzler - LSHS
Patty Rempala - LSHS
Alex Costanzo - LSHS
Kelly Reyner - LSHS
Timothy Jones - SHHS
Michael Milhilm - SHHS
Noah Connor - Cousino
Cathleen Saraza - SHHS
Andrew Rouditchenko - Mott
Amanda Hercula - Mott
Jacob Arche - SHHS
Elton Defrance - Mott
Evan Gonzales - SHHS



Ryan Gohlke - SHHS
Rachel Quesnelle - WWT
Megan Satawa - WWT
Abser Halim - Mott
Krystal Krygowski - Cousino
Mary Whitney - Mott
Najah Mubashira - Mott
Tasnim Choudhury - Mott
Jennie Feldpausch - Lakeview
Kevin Dewandeler - Fraser
Brent Zablocki - Fraser
Jacqueline Orjada - SHHS
Nick Thomas - Cousino
Joel Tylenda - SHHS

How MMSTC Made a Difference for Me Rebecca Pittman (MMSTC, 2010)

(MMSTC Newsletters are electronically distributed to Alumni. The editor is always looking for alumni updates are articles from alumni about relevant topics for current students.)

MMSTC truly helped me learn *how* to study, as well as exposed me to various college-level activities. Entering college, many of my fellow classmates did not know how to study without having homework to ‘bump up’ their grade and assist them in learning the material. At MMSTC, I felt our curriculum was more difficult than your typical high school. Time was spent learning the material and applications of it, rather than just memorizing what we would be tested on. I was one of the few college freshman who earned a 4.0 in their first semester, and I truly believe that is because I knew how to handle that much information and to how to learn new material. AP credits are also a blessing! College credits earned in math, biology and chemistry put me a step ahead in coursework and I feel I’m a step ahead in my statistics class as well due to what I learned in IDS and applied in my high school research projects.

The experiences I gained at MMSTC were irreplaceable! Doing research in high school really helped. As a college freshman, I started volunteering in the **Neuroscience Research Lab** and landed a job in the animal vivarium. This year I am working on a **Child Testimony Research Project** with an honors professor in a paid position. Both of these experiences will help me on my senior honors research project and when I apply to graduate school in addition to opening up more opportunities for me outside of the classroom.

Besides the vast academic and research benefits, the thing I like most about MMSTC though is the **relationships** I formed over my four years there. The friends I met and became close with at MMSTC are the ones that I **still** talk to and keep in contact with -- even though we now live so far away from each other! MMSTC truly made an impact on my academic as well as personal life. I will never forget the relationships I have gained or the experiences I had. I love MMSTC!

Chemistry & Chocolate – a tasty combination!

Last fall, Free Press restaurant critic, Sylvia Rector, wrote “Couple’s sweet idea aims to lift spirits in tough economic times”. MMSTC alum

Lauren Tignanelli Petz (2002)

and her husband Casey have opened Detroit Chocolate (www.detroitchocolat.com), a chocolate shop in Sterling Heights. When asked how her experience at MMSTC helped her after high school, Lauren said that she felt “way more prepared for college” than her peers and that she regularly draws on her experiences from high school in her current position teaching honors chemistry. In addition to being a teacher at Kettering High School in Waterford and small-business entrepreneur, Lauren and her husband have a 4 month old son. “MMSTC is part of the reason I can handle everything that’s going on in my life right now –we were held to high standards and expectations and we learned how to work hard!” She added that the skills she learned at MMSTC in *how to think, problem solve and be innovative* have served her well.



Spreading Warmth

I am a graduating senior at the University of Michigan and one of the cofounders of a company called M-Wrap LLC. 450 infants die every hour worldwide because they cannot regulate their body temperature. As a result, we created an instant and nonelectric heat technology in my materials science engineering senior design course. We are currently commercializing the technology to get it ready for market in the coming year. Learn more at www.m-wrap.org and help us spread the warmth to save lives.



Grace Hsia, (MMSTC '08)
University of Michigan, BSE in
Materials Science Engineering,
Class of 2012

Heartfelt thanks go out to MMSTC alum **Juzzlyn Perry (2010)** for his assistance in in-servicing 3rd quarter sophomore IDS teachers on Java Programming. His help in preserving this aspect of MMSTC curriculum in the face of staff reduction was invaluable! Feedback from alumni has identified MMSTC preparation in programming as an essential skill in future studies.

The MMSTC NASA Micro GX Experience!



MACOMB MATHEMATICS SCIENCE TECHNOLOGY CENTER

27500 Cosgrove | Warren, Michigan 48092 | www.wcskids.net/mmstc

Dr. Catherine Neuhooff, Dir. of Special Programs
MMSTC Newsletter Committee: MMSTC staff
Editor: Christine Kincaid Dewey
Printing and Distribution: Secretarial Staff



MMSTC MISSION STATEMENT

The mission of the Macomb Mathematics Science Technology Center, in partnership with families and community, is to create the best innovative environment which fosters excellence and vision in teaching, learning, and discovering the relationships of mathematics, science, technology, and society.

WARREN CONSOLIDATED SCHOOLS

31300 Anita | Warren, Michigan 48093 | 1-888-4WCS-KIDS | www.wcskids.net

Student Achievement

A focus on measurable student achievement in our Professional Learning Communities.

Clear Expectations

Clear expectations for every stakeholder, including students, staff and parents.

Strong Relationships

Strong relationships among all stakeholders, including: teacher-student, parent-teacher, principal-teacher, and superintendent-board member.

2011-2012 Board of Education

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In compliance with Title VI of the Civil Rights Act of 1964, Title IX of the Education Amendments of 1972, Section 504 of the Rehabilitation Act of 1973, the Age Discrimination Act of 1975, the Americans with Disability Act of 1990, and the Elliott-Larsen Civil Rights Act of 1977, it is the policy of the Warren Consolidated Schools that no person shall, on the basis of race, color, religion, national origin or ancestry, gender, age, disability, age, height, weight, or marital status be excluded from participation in, be denied the benefits of, or be subjected to, discrimination during any program, activity, service or in employment. Inquiries should be addressed to the Chief Human Resource Officer, 31300 Anita, Warren, Michigan 48093, (586) 825-2400, ext 63110.