Michigan Mathematics and Science Centers Network

Spotlight on Partnerships

ALLEGAN COUNTY M/S CENTER

Spotlight on Partnerships

Examples of collaboration with other educational institutions, businesses, government agencies, families, and community organizations to provide students with excellent educational opportunities that prepare students for careers in mathematics, science, and technology.

Higher Education:

The Center collaborated with WMU, GVSU and Colorado State University to offer various professional development opportunities including graduate credit when applicable. The Center also collaborates with WMU on the student program called Eco Races and with Kalamazoo Valley Community College as the host of the Science Olympics Tournament.

Community/Service Organizations:

- Allegan County Resource Recovery: Eco Races
- Allegan and Van Buren Conservation Districts: Student Stream Science (Classroom and field support, real-world data collection)
- Allegan County Community Foundation and the Van Buren Research and Development Foundation (grant funds to support programs)

Business & Industry:

- Perrigo Company: Classroom visits, Perrigo Fellows Program, donation of lab equipment and supplies
- US 131 Motor Sports Park: Free use of facilities to create authentic venue for Eco Races

K-12/ISD's:

- Partnership with Van Buren ISD (includes the Technical Center and eleven school districts)
- Allegan County Technical & Education Center: Partnership with the Electro-Mechanical Program (Project X Why Z) and the Environmental Sciences Program (Reef Keepers Program)

For more information, contact Amy Oliver, aoliver@alleganaesa.org

Michigan Mathematics and Science Centers Network

Spotlight on Partnerships

Examples of collaboration with other educational institutions, businesses, government agencies, families, and community organizations to provide students with excellent educational opportunities that prepare students for careers in mathematics, science, and technology.

Spotlight on Partnerships

BATTLE CREEK AREA M/S CENTER

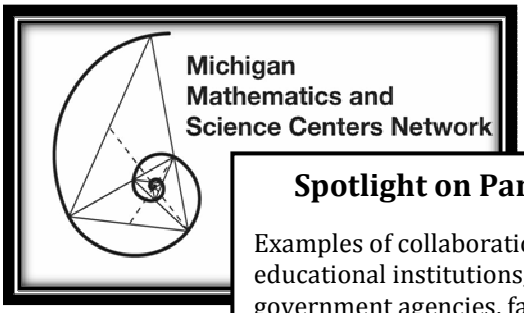
During 2006-07, the BCAMSC initiated a **Science Kit Sponsorship Program** to support the refurbishment of science kits for area schools. Schools have been unable to increase their support of the program beyond their current contribution, which is about 50% of the total cost. A Kit Sponsorship Drive was initiated in fall 2006 with area business, foundation, and industry support totaling just over $110,000. The Kellogg Foundation supported a marketing position for the Center for a period of two years, with the goal of building capacity in the kit program, partially through support from area business and industry. In addition to the financial support of the local kit program, another benefit was increased industry and business awareness of Center needs and programming.

A direct approach to increasing student achievement in science was provided by BCAMSC Outreach participation in the citywide, privately funded, initiative called *New Level Sports*. Area youth from multiple high-priority schools were given the opportunity to learn science outside their classroom. The goal of the organization is to provide area students with athletic and academic enrichment opportunities. Students participated in bi-weekly inquiry-based activities that supported the science curriculum that the students received in their classrooms. They were challenged in life, physical, and earth science. The racial/ethnic distribution within the participants was 95% African-American, 1 % Caucasian, and 4% Hispanic.

New Level Sports students also enjoyed a BCAMSC science and math experience by participating in demonstration classes provided by Center teachers on-site at the Center. The program also supported the current BCAMSC goal of the "identification of under-represented minorities with high abilities, followed by strong encouragement for enrollment in advanced programming." (In addition to the BCAMSC Minority Task Force, this program addresses another of the three MDE recommendations: "Finally, the Center should continue the development of a minority task force to address the issue of a representative diversity at its high school, both with the student and staff populations.")

- Three sessions were held with demonstrations in chemistry, math and astronomy.
- An average of 45 students attended each session.
- One student from New Level Sports has joined the BCAMSC chess club and is in attendance every week.
- Classroom teachers have recognized a more "focused" attitude in the students that have had the opportunity to experience the Center.
- Parents have requested assistance in things they can do at home to better prepare their child for BCAMSC admittance testing.
- BCAMSC Outreach has provided weekly enrichment sessions at New Level Sports to continue enthusiasm for science and math education.

The **BCAMSC Distribution Center** partners with area county special education programs to provide meaningful work experiences for a variety of students. The Battle Creek Public Schools STRIDE program helps young teens ready themselves for the work force by providing hands-on work experiences. Last year the Center helped 30 students meet their objectives. In return, these students (15 students per semester) worked on science kit consumables two hours per day for five days a week for a total of 600 hours per month. In addition to the STRIDE program, the Center partners with Calhoun ISD Doris Klausen Moderately Cognitively Impaired students. This partnership benefits both the Center and the participating "MOCI" students. The Center is able to avoid the high costs of labor in the counting and packaging of the kit materials and at the same time provide students with a



"real work" atmosphere. The "MOCI" students gain valuable experience in counting, packaging, following directions, and responsibility for doing a job from start to finish.

Spotlight on Partnerships

Examples of collaboration with other educational institutions, businesses, government agencies, families, and community organizations to provide students with excellent educational opportunities that prepare students for careers in mathematics, science, and technology.

Spotlight on Partnerships

BERRIEN COUNTY M/S CENTER & CASM

For more information, contact Connie Duncan, connie.duncan@bcmsc.k12.mi.us

The Berrien County Mathematics and Science Center enjoys a number of partnerships with agencies in the area. One long-standing partnership is with Andrews University.

Since the Berrien County Mathematics and Science Center was founded, Andrews University in Berrien Springs has been a strong partner is supporting educators and preparing students in mathematics and science.

The Center's accelerated high school program is hosted on the campus of Andrews University. University faculty teach all courses. Students are able to take advantage of the University laboratories and equipment, experience the college environment and interact with college students through electives. Students receive in-depth instruction and work in an environment that prepares mathematics, science and technology professionals.

The Center assisted the Andrews University Physics Department in the start up and operation of *Smartlabs*, a weeklong physics professional development in integrating technology into the physics classroom. An important component of *Smartlabs* is that each participating teacher brings a student to act as a student mentor when the teacher and student return in the fall.

The Honors College at Andrews University operates the Center's middle school portion of the Regional International Science and Engineering Fair (ISEF) and the Berrien County Arts and Science EXPO. The University also provides judges for the regional ISEF. In addition, Andrews University faculty also volunteer to run events at the Center's Science Olympiad.

This year, the Center partnered with the Michigan Department of Education to provide leadership in statewide projects such as the High School Science Content Expectations Companion Document, the statewide rollouts for the content expectations, and development and delivery of MMLA trainings.

Andrews University STEM faculty provided support for lesson study and trained substitutes in support of the Title II Mathematics and Science Partnership Grant, Project TEAM^2.

For more information, contact Dennis Lundgren, dlundgre@remc11.k12.mi.us

CASM

Through the Annual Girls Math/Science Conference, CASM collaborates with other educational institutions, businesses, agencies, and community organizations to provide 6th grade students and their parents with the opportunity to explore careers in mathematics and science. The conference involves educators, presenters, and resource providers joining forces in an event designed to close the gap between girls and boys in mathematics and science experiences and opportunities. Over 650 students and parents attended the event where they were exposed to role models in science and math careers, hands on presenters, live demonstrations, literature and resources, and students from local universities majoring in math and science.

Michigan Mathematics and Science Centers Network

Spotlight on Partnerships

Examples of collaboration with other educational institutions, businesses, government agencies, families, and community organizations to provide students with excellent educational opportunities that prepare students for careers in mathematics, science, and technology.

Spotlight on Partnerships

DETROIT M/S CENTER & DICKINSON-IRON

For more information, contact Julie Fick, julie@casmcenter.org

The Enhancing Instruction through Technology Grant

The Detroit Digital Learning Community (DDLC) was established last year through the Enhancing Instruction through Technology Grant. This project is a collaborative effort to expand the feeder path of digital student learners established through two other initiatives, Freedom to Learn (FTL) and the Accelerating Learning through Technology (ALTT). The initial project includes one elementary school, four middle schools, and one high school. Students are provided with laptop computers and other digital learning tools to enhance instruction in a project-based learning environment.

Approaches to Professional Development

- **Leadership Training for all Principals of Schools** focuses on providing excellent skills and knowledge in the successful implementation of digital resources in the learning and teaching process. School leadership should understand how to utilize staff and resources in new ways to support this new environment.

- **Advanced Mentor Training** for the original ALTT teachers and potential district-wide resources. This created “learning facilitators.” This training focuses on increasing mentoring expertise and capacity with the individual DDLC buildings as well as creating a centralized team to support the DDLC as a whole.

- **Peer-to-peer training for teacher buddies** focuses on helping teachers to convert traditional lessons to interactive and/or digital lessons.

- **Point of delivery training at each DDLC school** expands on the peer-to- peer training at individual schools.

For more information, contact Nancy Varner, nancy.varner@detroit12.org

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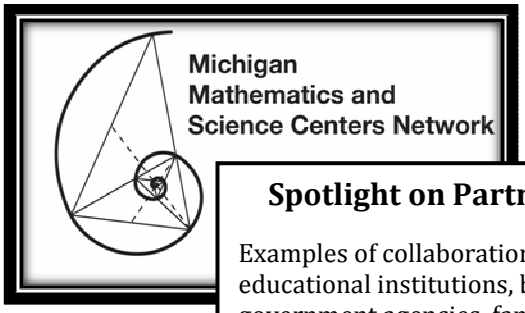
DICKINSON-IRON-MENOMINEE M/S/T CENTER

Partnerships continue to be the "life line" of the Center. Area businesses continue to underwrite the cost of the Regional Science Fair, the Regional Invention Convention and the eight week Summer Science Camp. They also help sponsor our Robotics team and middle school and high school Rockets for School teams. We receive cash donations as well as in-kind contributes which makes our programs viable. We also continue to work with the three universities here in the Upper Peninsula as well as the other Math Science Centers around the state to offer educational opportunities for our teachers.



Spotlight on Partnerships

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Spotlight on Partnerships

EASTERN U.P. CENTER

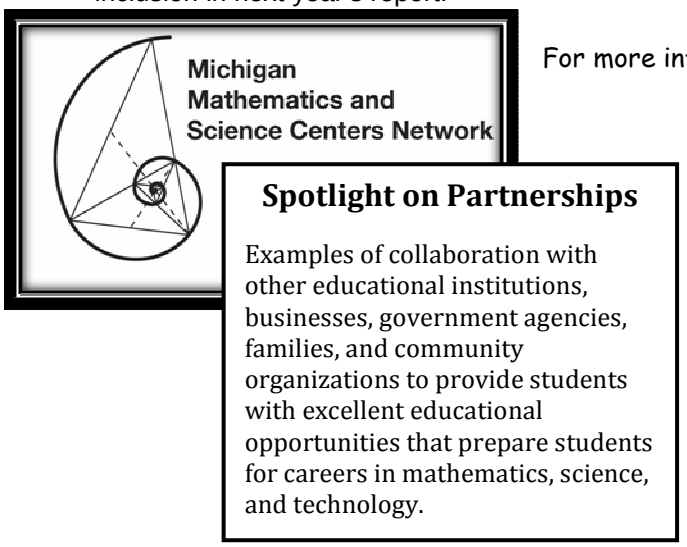
For more information, contact Dee Benjamin, dbenjamin@diisd.org

EUP MS Center staff is extremely proud of the partnerships they have established over the years and the excellent programming that is resulting from those partnerships. Notable partnership projects this year include:

- Collaboration with Lake Superior State University to provide university calculus (for credit) via IATV to high school students in the service area. A MS Center staff person, highly qualified in high school math and acting as a university adjunct professor, delivers the typically one semester course over one high school academic year. 2007/08 will represent the third year of this successful program.
- Partnership with the Special Education Department of the EUPISD to provide specific math and science related PD to special education teachers. The first phase involved the provision of disaggregated “students with disabilities” data to ISD and district level staff. The second phase has been to include programming to improve student outcomes. One such model was developed from the collaboration with area math curriculum review team members and special education teachers. The resulting Math Intervention Strategy Team (MIST) developed a plan for early identification of students struggling in math and specific programming designed to intervene on behalf of the identified students. This response to intervention model is currently being piloted in two districts in the region. In addition, Center staff members have met with middle and high school special

education staff to work on curriculum alignment, particularly with special education teachers that deliver math and/or science in a resource room setting.

- EUP MS Center staff partnered with EUPISD Technology Department to successfully seek funding to obtain and promote the use of a regional data warehouse to more quickly collect and deliver data at the student, classroom, district, and regional level. The other component of this project is the provision of professional development for teachers and administrators on the use of balanced assessments to improve student achievement outcomes.
- The partnership amongst all the Upper Peninsula MS Centers for the MSP project, now completing its second year, has been an excellent model of collaborative services across a huge geography. No one UP Center has the resources to support the excellent PD and follow up small group support for teachers that resulted from this project.
- The most recent partnership the EUP MS Center will be involved in is the partnership among the UP MS Centers, UP ISDs, Northern Michigan University, Lake Superior State University, and the Upper Peninsula Center for Educational Development (UPCED). This project will focus on PD and university course content delivery in mathematics and teaching strategies specific to special education students for middle and high school math and special education teachers across the UP.
- The Center offered both Math and Science Virtual Summer Camps in Summer 2007. Local math and science teachers facilitated while students were also able to interact with "virtual" math and science teachers via Michigan Virtual University. It was a very positive experience for all. Outcome data will be collected for inclusion in next year's report.



For more information, contact Michelle Ribant,

Spotlight on Partnerships

GENESSEE AREA M/S/T CENTER

mribant@eup.k12.mi.us

Finding partners has become critical to the continued existence of the Math and Science Center and the future of the director. The director's salary is offset by partnerships with two separate MSP grants and GAMSC has successfully been part of two other initiatives that contributed to the director's budget and kept him as "part of the payroll." Other non-financial partnerships have been equally important to GAMSC as a service entity.

Other GAMSC partnerships include:

- Kettering University on a sustained energy project, a Distance Learning Initiative, and as a working committee for Automation Alley.
- The Genesee Soil and Conservation District to provide several student projects including Project Green.
- The Flint Cultural Center and Longway Planetarium offers “Girls in Science” and “Brains and Braids.”
- The Girl Scouts of America and the Boy Scouts of America work on service projects at the Ligon Outdoor Center in exchange for camping time at our outdoor center.

For more information, contact Larry Casler, lcasler@geneseeisd.org

Michigan Mathematics and Science Centers Network

Spotlight on Partnerships

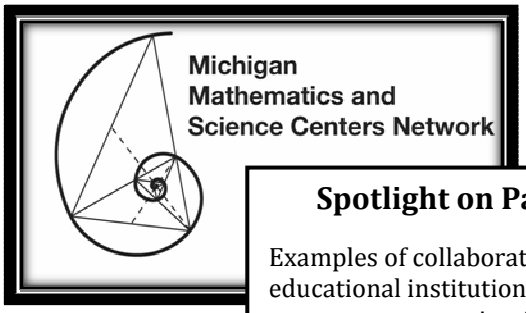
Examples of collaboration with other educational institutions, businesses, government agencies, families, and community organizations to provide students with excellent educational opportunities that prepare students for careers in mathematics, science, and technology.

Spotlight on Partnerships

GRAND TRAVERSE REGIONAL M/S/T CENTER

Partner	Activities
Michigan Department of Education	Center Director/Science Consultant presented training in item development, and wrote assessment items for the Michigan Merit Exam as part of the Item Development Team. Also participated in Content Review Committee.
Michigan Mathematics Leadership Academy	Collaborated with mathematics consultants statewide, as well as MDE personnel, to plan research-based professional development and curriculum support.
Northwestern Michigan College's Water Studies Institute	Provided the venue, as well as resource professionals for our Water Watch Student Congress. The M/S Center provided training in water quality monitoring for teachers as part of a series of summer DTE-funded workshops, as well as subsequent monthly "Dinner & Dialog" meetings, designed to help teachers develop "place-based" educational projects.
Northwestern Michigan College's Mathematics and Science Departments	NMC provided funding, venue, and an "open house" for their laboratories at our annual Student Recognition Night. NMC instructors also served as judges for symposium projects.
Grand Valley State University	Center Director/Science Consultant provided science professional development for student teachers in our region.
Inland Seas Education Association	TBAISD completed the coordination of funding for ISEA's on-site "constructed wetland" project.
TBAISD Career Tech Center - Manufacturing Technology Academy	Collaborated with MTA to provide a forum for our high school engineering students at the Northern Michigan Mathematics, Engineering and Science Symposium.
Grand Traverse Conservation District	Center Director/Science Consultant was instructor for Regional Envirothon competition and continued involvement in planning a new regional nature center.
Great Lakes Children's Museum	Collaborated to provide training for Pre-K (Way to Grow) instructors and daycare providers in mathematics and science.
The Watershed Center, Grand Traverse Bay	Co-founder of Water Watch, provided resource professionals for Water Watch Student Congress.
Grand Traverse Bay Underwater Preserve	Center Director/Science Consultant is the Education Coordinator for GTBUP Board.

For more information, contact Tom Wessels, twessels@tbaisd.k12.mi.us



Spotlight on Partnerships

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Spotlight on Partnerships

REGIONAL M/S CENTER (GVSU)

REGIONAL M/S CENTER (GVSU)

The Regional Math and Science Center continues to set a high priority on collaborating with other educational institutions, businesses, government agencies, families, and community organizations to provide students with excellent educational opportunities that prepare them for careers in mathematics, science, and technology. The Grand Rapids area has a long tradition of community and business support for education. We have fostered long term and productive partnerships to support student programs. These partnerships have allowed us to share tremendous human and financial resources with the K-12 community. Some examples of ongoing partnerships are:

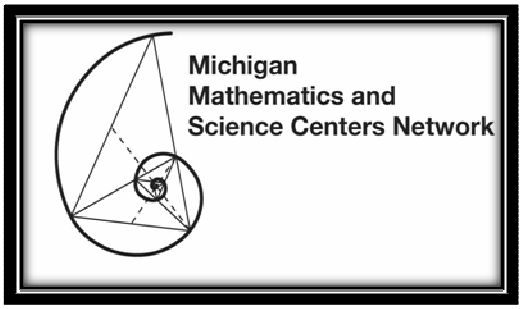
- STEPS Camp - Each summer eighty 7th grade girls attend a free, four day camp to have an engineering design and manufacturing experience and to encourage them to take higher level mathematics and science courses in high school. Generous corporate, community, and foundation support has provided funds totaling approximately $400,000 over the past six years. Major supporters have been the Society of Manufacturing Engineers Educational Foundation, Alcoa Foundation, Nokomis Foundation, Loosemore Foundation, Grand Haven Area Community Foundation, and the Sebastian Foundation. Corporate supporters include Howmet Castings, Smiths Aerospace, and Warner Norcross and Judd LLP. Additional funding came from various individuals and the Michigan Space Grant Consortium.

- Michigan Statistics Poster Contest – For seven years the Regional Math and Science Center has partnered with the GVSU Statistics Department to host the Michigan Statistics Poster Contest. Over 450 K-12 students enter the competition. Each year ten Michigan winners are selected and sent to the national competition.

- Michigan Science Olympiad Tournament – The Regional Math and Science Center in partnership with Grand Valley's College of Liberal Arts and Sciences has hosted 23 regional MSO Tournaments. This tournament has evolved into the largest regional tournament in the nation with over 1,800 students in attendance and boasts several national winners at the middle and high school levels. Support comes from the generosity of GVSU and the Loosemore Foundation.

- Science is for Girls – Over 150 5th and 6th grade girls attended the "*Science For Girls*" Event. This unique hands-on science day is a partnership between local Girls Scout Troops and the American Association of University Women.

- Regional Math and Science Center hosts the *Summer Science Adventure Day Camps* on the Allendale Campus. Each year, close to 100 students in grades 4-9 have participated in the enrichment camps which include both an academic and community adventure component. This year's campers visited the Gerald R. Ford Airport Fire and Rescue Facilities, the Rapid Air Hanger and Aeromed to view the aircraft in their hanger facilities and take a plane ride, and the Annis Water Resources Institute to build and drive an underwater remote controlled vehicle.



For more information, contact Karen Meyers, meyersk@gvsu.edu

Spotlight on Partnerships

HILLSDALE-LENAWEE-MONROE M/S CENTER

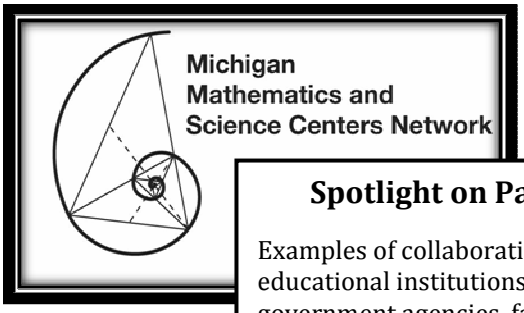
Spotlight on Partnerships

Examples of collaboration with other educational institutions, businesses, government agencies, families, and community organizations to provide students with excellent educational opportunities that prepare students for careers in mathematics, science, and technology.

The Hillsdale-Lenawee-Monroe Mathematics and Science Center acknowledges the power of partnerships with several organizations that provide funds or in-kind support to its programs and services.

- A partnership with the Lenawee Intermediate School District's Stubnitz Environmental Education Center has provided a facility for the Center, with workstations for its director and secretary, as well as a meeting room and lab room for programs and meetings.
- An Adrian College partnership has provided a dining hall facility for exhibits and judging for the three-day Tri-County Science Fair, as well as use of the auditorium for the Science Fair Awards Ceremony.
- A Department of Environmental Quality partnership has brought grant funding for the program costs, participants' fees, and take-home curriculum kits for five Michigan Environmental Education Curriculum Support training workshops.
- The Michigan Mathematics and Science Centers Network collaborated to produce the statewide High School Math and Science Success workshop series. Over 1,500 high school math and science teachers were trained in the period from January-April of 2007.

For more information, contact Pam Bunch, pam.bunch@lisd.us



Spotlight on Partnerships

Examples of collaboration with other educational institutions, businesses, government agencies, families, and community organizations to provide students with excellent educational opportunities that prepare students for careers in mathematics, science, and technology.

Spotlight on Partnerships

HURON M/S/T CENTER

- Student Achievement Model. Huron Mathematics, Science, and Technology Center staff have partnered with special education staff to develop and deliver the Student Achievement Model. This systemic approach to improving student achievement was created to improve learning and achievement of all students using research-based teaching strategies. The model involves a partnership with LEAs in three counties and two neighboring ISDs.

- Embracing Our Earth. Our environmental stewardship event known as "Embracing Our Earth," in its third year of existence, is a prime example of partnership with other educational institutions, businesses, governmental agencies, families, and community organizations.

  As the event's brochure lists, some 75 exhibitors (including several colleges and universities) participated in the event, and some 60 entities collaborated in sponsoring Embracing Our Earth III. The team of planners includes County Commissioners, MSU Extension Office, Economic Development Commission, a local newspaper publisher, an alternative energy company representative, one superintendent, DNR, non-educational professionals, and businesses.

- College Credit. Central Michigan University and Saginaw Valley State University partner with us to make available college credit for professional development sponsored by the Center. This is an important service to teachers in our area because of our remote location relative to university access.

- Convergence Education Foundation. Selected Huron Math/Science Center schools as recipient of IVD (Innovative Vehicle Design) project partnership—provided $10,000 for vehicle design and construction. CEF supports work of Embracing Our Earth with physical presence of Segway and staff to demonstrate. In Spring 2007, Convergence invited HMSC to investigate partnership with Purdue University. Through this CEF/Purdue support agreement, students in Huron Math/Science Center schools will participate in the EPICS project—a first in Michigan.

- Huron County Community Foundation. Makes available funding to support student activities sponsored by Center staff and the Embracing Our Earth event.

For more information, contact Scott Whipple, swhipple@hisd.k12.mi.us

Michigan
Mathematics and
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Spotlight on Partnerships

Examples of collaboration with other educational institutions, businesses, government agencies, families, and community organizations to provide students with excellent educational opportunities that prepare students for careers in mathematics, science, and technology.

Spotlight on Partnerships

JACKSON COUNTY M/S CENTER

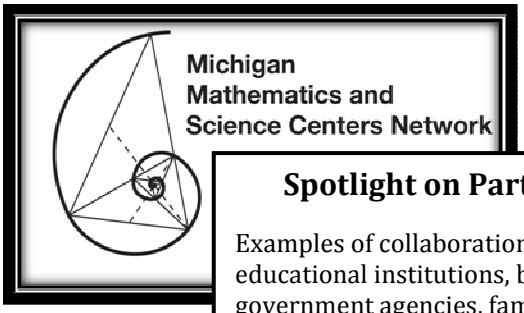
The Center has collaborated with Spring Arbor University to obtain Improving Teacher Quality (ITQ) Grants to fund the professional development programs listed on Page 4: Elementary Science ITQ Grant; Grades 6-10 Math ITQ Grant; and JPS Grades 5 – 12 Science ITQ Grant. In addition, the most recent JPS Grades 5-12 Science Grant involved collaboration with instructors from Jackson Community College who provided science content professional development.

The Center also collaborates with the local Astronomy Club. The Center maintains the Camp McGregor Observatory telescope and facilities, and Astronomy Club members volunteer their time at the Observatory for star gazing nights for classes of students and other community organizations.

In addition, the Center has collaborated with the Battle Creek Mathematics and Science Center on the Institute of Museum and Library Services Grant, a federal grant to purchase earth and physical science equipment for loan to local schools, the development of science lessons aligned to state benchmarks, and associated professional development required for the effective utilization of these materials in the classroom for student learning.

Finally, the Center participates fully in the Mathematics and Science Center Network collaborative initiatives, such as High School Mathematics and Science Success (HS-MASS) and the Michigan Mathematics and Science Teacher Leadership Collaborative (MMSTLC).

For more information, contact Jen Nimtz, jen.nimtz@jcisd.org



Spotlight on Partnerships

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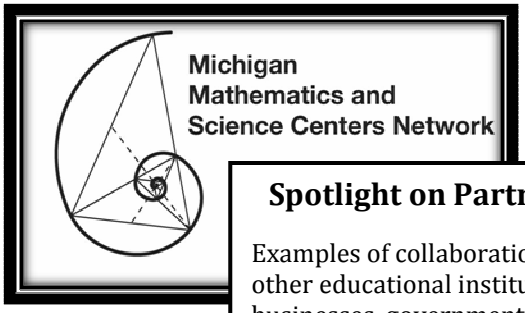
Spotlight on Partnerships

KALAMAZOO AREA M/S CENTER

The Center continues to experience a great deal of support from the community. During the 2006-2007 school year forty-six members of the KAMSC research team were placed in the community (Pfizer, Western Michigan University, etc.) with scientists and engineers to conduct research. Ten students completed a one semester mentorship with professionals in the community, such as physicians, engineers, mathematicians, and others. Pfizer, Inc continues to be supportive by providing materials and human resources needed to support the research program. Western Michigan University College of Engineering and Applied Sciences collaborative efforts have provided opportunities for KAMSC students that have been invaluable. Kalamazoo College has collaborated by having a representative serve on the advisory committee for the past two years. We jointly sponsor a mathematics speaker series each year with Kalamazoo College. Blue Granite has become an excellent resource for students interested in technology. For the past several years they have provided summer internships for KAMSC students based on their performance while completing a mentorship at Blue Granite. The two area hospitals have provided invaluable experiences for students in the area of medicine. A partnership has been developed between KAMSC and Western Michigan University's College of Health and Human Services. We are now able to host the annual *Searching for Health Conference* in the facility. Presently, we are collaborating on a NSF proposal. During the summer KAMSC collaborates with the City of Kalamazoo Parks and Recreation Department and the Boys and Girls Club (8 sites) to provide *Science in the Park* for area students during the summer as part of our playground outreach initiative. We collaborate with KRESA by actively participating on the county curriculum council math group and the Kalamazoo County high school principal organization (KC-COPS).

For more information, contact Brenda Earhart, bearhart@kamsc.k12.mi.us



Spotlight on Partnerships

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Spotlight on Partnerships

LIVINGSTON/ WASHTENAW M/S CENTER & MANISTEE, WEXFORD-MISSAUKEE M/S CENTER

LIVINGSTON AND WASHTENAW M/S CENTER

Federal Title II B Mathematics and Science Partnership Grant

The Livingston and Washtenaw Mathematics and Science Center (LAWMASC) continued their partnership with Lincoln Consolidated Schools, Washtenaw ISD, the University of Michigan-Dearborn and the Federal Title II B Mathematics and Science Partnership Grant for sustained Professional Development to provide a Summer Math Institute for Middle School Teachers. Sixteen teachers attended a 30 hour summer institute.

Everyday Math Conference

LAWMASC partnered with WISD, Ann Arbor Public Schools, Howell Public Schools, Lincoln Consolidated Schools, Manchester Community Schools, Milan Area Schools and Everyday Mathematics to provide the "Everyday Math Conference" in August 2006. Over 100 teachers received professional development to support the teaching of this elementary mathematics program.

For more information, contact Nicole Garcia, ngarcia@wash.k12.mi.us

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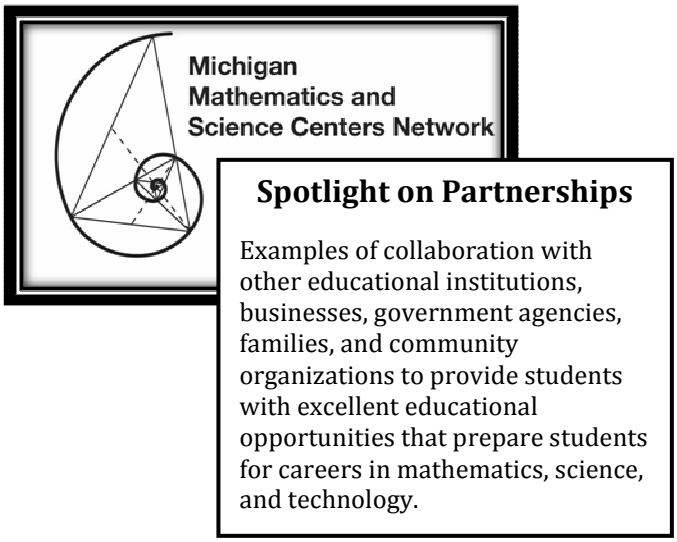
MANISTEE, WEXFORD-MISSAUKEE M/S CENTER

Manistee, Wexford-Missaukee Regional Math/Science Center has been working on developing partnerships in a couple of different venues. Within the WMISD area we have developed a partnership with Baker College. Baker provided Math Counts training and mentors to work in our 6th grades this year to target low achievement areas and provide support for improvement through utilization of the Math Counts materials. Baker has committed to the training, the organization of the seeking the mentors and setting schedules. To do so, they will be working with our industrial group and engineers to provide the people needed for the mentor program. This is a huge commitment for Baker and we appreciate their willingness to support math/science education in our area.

Within the Manistee ISD there is a history of working with the local engineers. The local engineers group developed a Math Counts competition within their area and have done so for the past several years.

For more information, contact Karen Mlcek, kmlcek@wmisd.org



Spotlight on Partnerships

MASON-LAKE OCEANA M/S CENTER

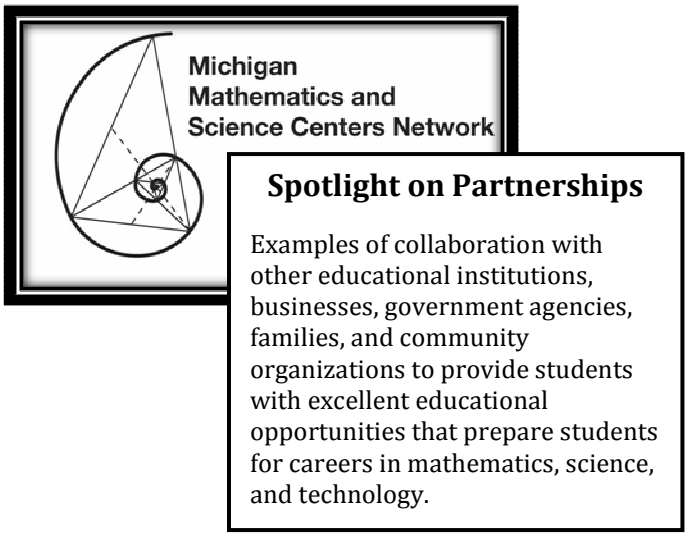
This year, MLOMSC has extended collaborative efforts to include Mason-Lake Tech Prep. This collaboration has been truly unique. The interim director was serving both MLOMSC and the Career and Technical Education Center. This partnership has inspired mathematics alignments to be created with every tech prep course at our local center. Career and Technical Education teachers were given a "mathematics lesson a month" to try in their classrooms. An Internet-based tutorial for the Work Keys Applied Mathematics Test was implemented at Mason-Lake Tech Prep this school year. (The implementation of this tutorial appeared to give students more confidence when taking the Michigan Merit Examination for the first time this school year.) One of the Tech Prep teachers attended the Science Institute series of workshops to determine the amount of science that is currently taught in her curriculum. Two other Tech Prep teachers visited the Manufacturing Technology Academy in Traverse City to acquire ideas on how to incorporate more mathematics or science in their curriculum. The interim director facilitated discussions with the Tech Prep staff on the new graduation requirements and which general education credits are appropriate for our center to attempt to offer.

MLOMSC is committed to a smooth transition for students into post-secondary training. MLOMSC has worked with West Shore Community College this year to look at the alignment of some of their courses to the new High School Content Expectations for Pre-Calculus and Physics. We have also begun dialogue with West Shore Community College on how we may be able to work together in the future to offer some upper level high school courses to our area schools with highly-qualified secondary instructors at West Shore Community College.

MLOMSC has teamed with other area intermediate school districts on projects such as the NMLC Mathematics Project, MATHCOUNTS, the Leadership Academy, and the West Shore Academy. Manistee Regional Mathematics and Science Center was gracious enough to allow our teachers to attend the Summer Science Institute. We have found that collaborating with our nearby ISD neighbors has provided opportunities to divide the work load and create quality products.

MLOMSC continues to value the relationships they maintain with DOW, HARSCO, Nordlund & Associates, and our local engineers in the MATHCOUNTS competition. Furthermore, we appreciate the support from DOW and Martin Marietta Magnesia Specialties in writing letters of support for the Michigan's Advanced Placement Success Initiative.

For more information, contact Kathy Surd, ksurd@mlisd.k12.mi.us



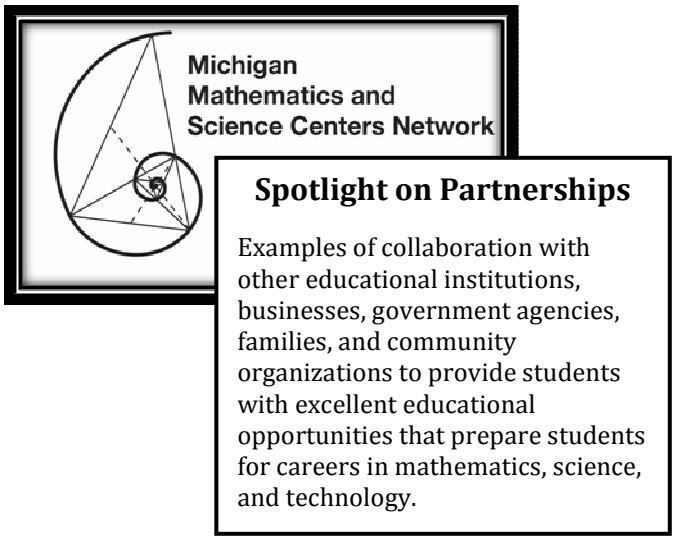
Spotlight on Partnerships

MECOSTA-OSCEOLA M/S/T CENTER

The Mecosta-Osceola Math Science Center actively seeks out and nurtures our collaborative efforts with a variety of partners. Most obvious is the partnership with Ferris State University, the host site of our accelerated high school program. Professors serve as guest speakers, mentors for students, and judges at our Regional Science & Engineering Fair.

Outreach is accomplished through a variety of partnerships. The Annis Water Institute, the Muskegon Watershed Council, and Nestle Waters are key partners in our annual Water Festival. Working in collaboration with the Convergence Foundation and its partners, we have begun work to encourage students to pursue careers in engineering. In addition, our Math Coordinator worked with CTE instructors to find “nuggets” of mathematics in the CTE programs offered at our CTE Center.

For more information, contact mrobinson@moisd.org



Spotlight on Partnerships

MAISD REGIONAL M/S CENTER

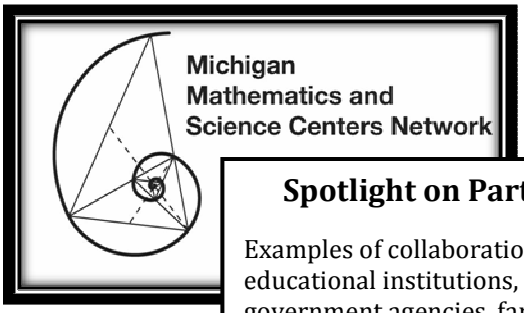
Local high school science labs are getting a dose of new equipment thanks to the ***REsources for Authentic Learning in Science*** (REAL Science) project. The project is meant to provide high schools throughout the county with access to current, real-world lab equipment. This equipment, selected by teachers collaborating with local industry experts, reflects the industrial and commercial labs of today. The cost for these instruments is beyond the reach of chronically-strained school budgets.

The average annual cost for the first three years of the project is about $155,000. The Community Foundation for Muskegon County grant support for year one start-up costs totaled $27,500 from three funds— the Unrestricted Fund, the Seyferth Fund, and the Medical Society Fund. Added support from the Osteopathic Foundation of West Michigan and private donations from the William Jackson family and other individuals totaled over $30,000. The MAISD and local school districts have also begun making an annual investment in the project. A recent $50,000 donation from the House Family Foundation will further support the project.

This summer local high school science teachers were introduced to the initial purchase of chemistry and biology equipment through hands-on training sessions. These teachers will apply what they learned by using the REAL Science equipment in their very own classrooms beginning with the 2007-2008 school year. The MAISD Regional Mathematics and Science Center, in collaboration with a local community based board of advisors, directs and manages the program including the logistics of transporting the equipment on a rotating basis to each of the area high schools. This will not only achieve an economy of scale for the equipment, but also for the associated ongoing professional development and curriculum support provided by the Math and Science Center.

It is anticipated that REAL Science will impact up to 50 teachers and thousands of high school students in Muskegon County over the next four years. Students will be better prepared to successfully enter two and four year STEM (science, technology, engineering and mathematics) degree programs. Additionally, these students will be able to pursue local/regional employment opportunities requiring STEM skills right out of high school. Ultimately, REAL Science will contribute a more qualified workforce to help attract “new economy” industries to the area. The project was pioneered by retired chemist, Daryl Cardy, in collaboration with Michael Bozym, retired ISD Superintendent, and William Schroeder of Trace Analytical Industries.

For more information, contact David Krebs, dkrebs@muskegonisd.org



Spotlight on Partnerships

Examples of collaboration with other educational institutions, businesses, government agencies, families, and community organizations to provide students with excellent educational opportunities that prepare students for careers in mathematics, science, and technology.

Spotlight on Partnerships

NORTHWOODS M/S/T CENTER & OAKLAND SCHOOLS S/M/T CENTER

NORTHWOODS M/S/T CENTER

For the second year NMSTC was a partner in the "Building Bridges" Math-Science Partnership grant for the entire Upper Peninsula – targeting mathematics teachers at the middle and high school level. The grant is a regional effort with participation from approximately 100 teachers, all five U.P. mathematics and science centers, and the area's three universities, Michigan Technological University, Northern Michigan University, and Lake Superior State University. NMSTC has 23 teachers in the grant: 15 middle-school teachers and 8 high school teachers. The grant aims to improve student performance in mathematics by increasing teachers' content knowledge and by exploring "best practices" in mathematics instruction. Teachers participate in a lesson study process to develop mathematics lessons with teams.

In June we partnered in an innovative summer program called “Jump Start,” with the YMCA of Delta County, Delta-Schoolcraft Intermediate School District (DSISD) and Bay College. *This program will be especially helpful in preparing students for Algebra I in their first year of high school.*

The “Jump Start” program offered assistance to students to improve their mathematics (specifically algebra) skills and health awareness, and then allowed them to explore applications of both in a variety of applications and careers. Students received direct instruction in mathematics from a team of teachers, including Bay College staff. They explored careers and technical applications of mathematics and participate in physical and heath fitness activities. The programs were realigned to Michigan’s mathematics standards and content expectations and pre- and post-assessments were included to measure student gains in mathematics content knowledge and their health and fitness IQ.

The “Jump Start” program ran four days per week (Monday – Thursday) for four weeks beginning on June 18 and ending July 19 (The program did not meet during the 4th of July week). Classes started at 8:30 a.m. and ended at 12:30 p.m. Mathematics and technology instruction occurred at Bay College; fitness/health activities were held at the YMCA. A college instructor and middle school math teacher taught the algebra students. Bus transportation was provided with centralized pick-up points to allow students from all DSISD schools to participate in the “Jump Start” program. We had 28 students begin the program and 23 finish the four week program with great success! The students gained math proficiencies and even learned some kayaking skills to boot!

For more information, contact Tom Abramsom, tabramson@dsisd.k12.mi.us

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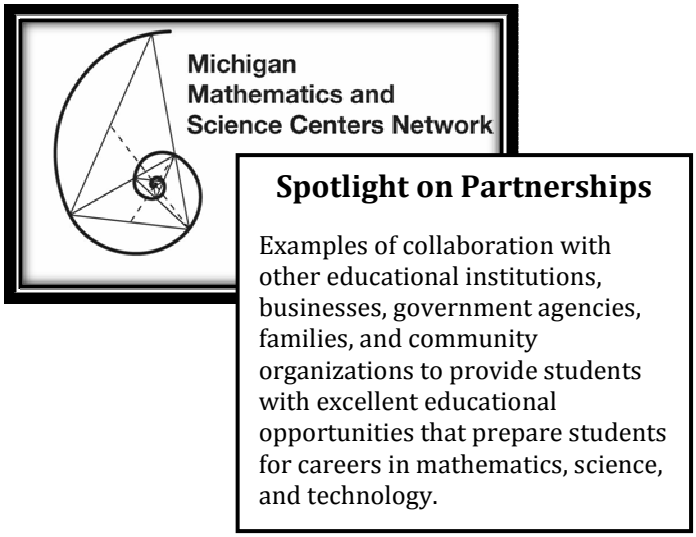
OAKLAND SCHOOLS S/M/T CENTER

A MSP grant focusing on underachieving schools, VISIONS, was granted to Oakland Schools. All underachieving schools in science in Oakland County were part of this grant. The Center worked with seven underachieving/high priority school districts (22 schools) to provide in-depth science content knowledge and understanding in the physical and earth sciences. Forty-two science teachers participated in graduate credit courses in physical (3) and earth science (3). The project included a presentation on classroom management and the use of trained mentor coaches to assist participating teachers in implementing new skills and knowledge into their classrooms.

For more information, contact LaMoine Motz,



Spotlight on Partnerships

GLENN T. SEABORG M/S CENTER

lamoine.motz@oakland.k12.mi.us

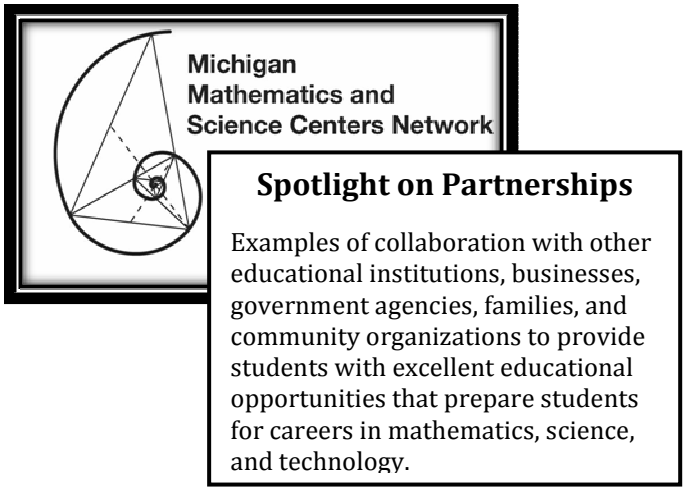
The Seaborg Center has a sustained partnership with Northern Michigan University (NMU), which furnishes our facilities and funds a portion of our base budget. In return, the Center conducts professional development activities that link K-12 teachers with faculty members from the mathematics, education and science departments. NMU's elementary education students conduct our weekend College for Kids programs under the supervision of Center staff. The Center also participates in university committees and on-campus activities.

The Seaborg Center partnered with the Northern Area Health Education Center and Marquette General Hospital to host a three-day residential program for 38 high school students participating in the AGES Program (Area Geriatric Education Scholars). These talented students were selected to receive paid summer internships at approximately 15 regional geriatric care facilities throughout the Upper Peninsula. In their three days on campus, students learned about healthcare professions from faculty and staff at Marquette General Hospital, Northern Michigan University, and Wayne State University. They visited Marquette General Hospital and a local geriatric care facility, and they received six hours of training in CPR. A major goal of this program is to interest Upper Peninsula students in careers in healthcare. Our region has a shortage of healthcare workers and students who live in the area are good recruits.

This year, the Seaborg Center coordinated the 2007 Biennial Lake Superior Youth Symposium, held in Big Bay, Michigan on May 10-13. The symposium brought together 137 students in grades 8-12 from Michigan, Wisconsin and Ontario to focus on the shared environmental concerns of the Lake Superior Basin. Activities included hands-on explorations, field trips, watershed research, speakers, and interactive problem-solving sessions. Throughout the symposium, participants worked to develop a project to implement when they return home to improve and/or protect the quality of life in the Lake Superior basin. The Center partnered with the following agencies to provide financial and in-kind support for the symposium: Alger Conservation District, COSEE Great Lakes – Centers for Ocean Sciences Education Excellence (NOAA/NSF), Great Lakes Center for Youth Development, Hiawatha National Forest (USDA Forest Service), Lake Superior Bi-National Forum, Marquette

Area Public Schools, Michigan Department of Natural Resources, Michigan Sea Grant Program, Michigan State University's Extension Program in Alger County, Michigan Technological University, Moosewood Nature Center, Northern Michigan University's Center for Native American Studies, Pictured Rocks National Lakeshore (National Park Service), Superior Watershed Partnership, US Fish and Wildlife Service, and the Western Upper Peninsula Center for Science, Mathematics and Environmental Education.

For more information, contact Debra Homeier, dhomeier@nmu.edu



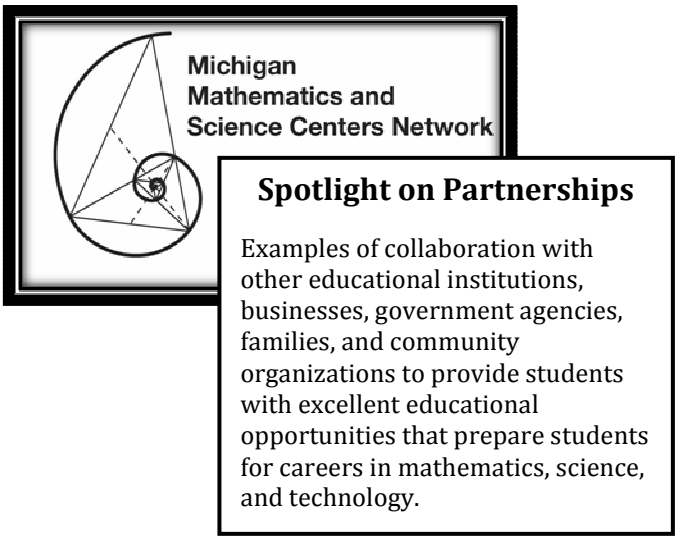
Spotlight on Partnerships

SEE-NORTH

SEE-North's mission is first and foremost to make science and math "come alive" for students, teachers and community residents. To do this, we work with many agencies, some of which have been mentioned elsewhere in this report. Our programs may include a focus on careers, but our primary goal is to be sure that young people view both science and mathematics as tools for thinking and problem-solving, and that they view the communities in which they live as places where they can effectively apply their knowledge and make intellectual contributions.

In the coming year, we plan to further develop SEE-North as a leader in place-based education in Michigan by a) obtaining grants to hire a full time educator with experience in K-12 school-community partnerships, curriculum and inquiry-based instruction; and b) obtaining grants to implement various programs and services that focus on place-based education. As an organization, we believe that a necessary first step to academic achievement is to engage students in learning that is meaningful and relevant to their lives, and place-based education provides the best strategies and opportunities for accomplishing this. SEE-North's Executive Director is already involved in leading the Great Lakes Stewardship Initiative, a grant program of the Great Lakes Fishery Trust. (Two Mathematics and Science Centers received Planning Grants through the Initiative in Spring 2007, and several other Centers are working with other grantees who received funds from the Trust.)

For more information, contact Marty Samson, martys@seenorth.org



Spotlight on Partnerships

ST. CLAIR RESA M/S CENTER & SVSU REGIONAL M/S CENTER

ST. CLAIR RESA M/S CENTER

The annual St. Clair County Science and Engineering Fair is strongly supported by the local chapter of professional engineers. They provide judges for middle and high school entries and spend many hours helping with the Fair. The St. Clair County of the Society of Professional Engineers presents an Engineers Choice trophy for the best engineering related project, the St. Clair County Medical Society sponsors an award for best high school biology project and Orthopedic Associates sponsors an award for best medically related project. An anonymous donor pays all expenses for a student observer to attend the International Science and Engineering Fair from our science fair each year.

For more information, contact Terry Parks, tparks@sccresa.org

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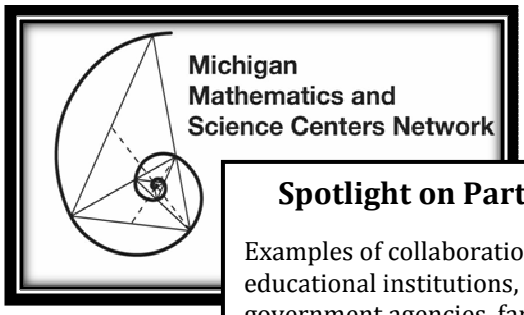
SVSU REGIONAL M/S CENTER

The Saginaw Valley State University Regional Mathematics and Science Center has always tried to share successes in programs with its service area districts and other math and science centers through work and dissemination projects (SEMS, SEMSplus, MASER just to mention a few).

The latest partnership is a MSP Title IIB Collaborative Grant with Grand Valley State University, Saginaw Valley State University, University of Michigan- Ann Arbor, University of Michigan- Dearborn, the Mathematics and Science Network and higher education institutions and their STEM faculty to build capacity at Math and Science Centers across the state and develop local mathematics and science teacher leaders. This is a major statewide initiative which will be ongoing for at least three years and will hopefully develop a self-sustaining component for long term impact on mathematics and science education for years to come.

For more information, contact Walter Rathkamp, rathkamp@svsu.edu



Spotlight on Partnerships

Examples of collaboration with other educational institutions, businesses, government agencies, families, and community organizations to provide students with excellent educational opportunities that prepare students for careers in mathematics, science, and technology.

Spotlight on Partnerships

WAYNE RESA, M/S CENTER

Since the Fall of 2004, the Wayne County Mathematics and Science Center at Wayne RESA has worked in partnership with the Center of Mathematics Education at the University of Michigan-Dearborn and the Hamtramck and Highland Park school districts to address the challenge of improving student achievement scores in mathematics through **Project: Making Mathematics Matter (PM^3)**. This Wayne County initiative is funded through MSP funds overseen by the U.S. Department of Education to increase the body of research about what kind of professional development makes a positive difference, specifically for mathematics teachers.

The Center was awarded a continuation grant in 2006. **PM^3** was designed to be a systemic initiative with experimental design and two major components—mathematics institutes and mathematics coaching. We will focus on the former. The grant leadership partners planned a sequence of Mathematics Institute classes for fifty teachers of mathematics in grades 4 through 8 from Hamtramck and Highland Park. Each class is designed for thirty-hours of professional development and carries graduate credit to help participants work toward "highly qualified" status under NCLB. To date, we have obtained the following information regarding the mathematics Institutes from our evaluator.

Overall, the Institutes resulted in substantive improvement in mathematics content, pedagogy, and instructional practice. Teachers' responses regarding their collegial interaction may have implications for the Institute approach. When asked what they considered the most valuable among their Institute experiences, the most frequent response among them was the opportunity to work closely with their colleagues.

Further, they reported that this interaction continued, following the end of the Institute. Evidence also suggests that effective learning communities were fostered in both districts of the project. Teachers emphasized the advantages of working together with their own district colleagues, but also described the advantages of hearing different perspectives from their colleagues in the other district. They recognized that the other district presented different challenges and priorities, but found their neighbors' contributions highly worthwhile.

The other major benefit that all Institute teachers mentioned was that of learning to take their students' perspectives through challenging problems they themselves had to struggle to solve, thereby learning to "think like my students." Through this process, they also learned the value of effective questioning and taking the role of guide rather than lecturer in their classrooms.

The improvement in student attitudes in concert with an increase in teacher content knowledge represents an encouraging indication that student attitudes may be highly related to what teachers' project, even over a relatively short timeframe.

Finally, and most importantly, Hamtramck and Highland Park represent disparate types of environments; these teachers work in difficult situations with the continuing turmoil, uncertainty, and disruptions that come with very low socioeconomic conditions. In spite of these differences, the Institutes resulted in improvement in content and pedagogical knowledge as well as in classroom practice.

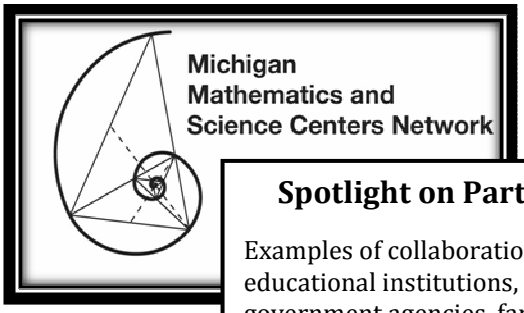
The greatest challenge facing those in charge of professional development is providing the type of high quality training represented by the Institutes to large numbers of teachers. This issue of breadth versus depth means that in all probability difficult choices have to be made. In making these difficult decisions, consideration should be given to the substantial effects of approaches such as the Mathematics Institutes in impacting classroom practice.

Finally, this is an email received at our Center from Denise Litterio, Director of Special Services in Hamtramck regarding the mathematics Institute that her teachers participate in along with the general education teachers.

"I appreciate the support you have given my teachers. I believe the 39% gain in math for special education students at the middle school on the MEAP directly relates to the Math Institute. When I looked at raw scores, it appeared all the students were at level 3 and 4. However, when the report card came out I believe we had about 17 special education students who were provisionally proficient, meaning they met the cut score to be a 2 rather than a 3. This was a BIG surprise to me since I thought for sure from the raw scores we would be the reason Kosciuszko did not make AYP. It goes to show you, you can't tell by reading raw scores. My staff is working hard to change to adjust to the general education curriculum. Their hard efforts paid off enough for 4 of the 5 buildings to make AYP. RESA support has been greatly appreciated. We always look forward to more of it!"

The Center looks forward to the final year of in-depth work with the mathematics teachers in Hamtramck and Highland Park.

For more information, contact Libby Trenkle, trenkll@resa.net



Spotlight on Partnerships

Examples of collaboration with other educational institutions, businesses, government agencies, families, and community organizations to provide students with excellent educational opportunities that prepare students for careers in mathematics, science, and technology.

Spotlight on Partnerships

WESTERN U.P. CENTER

The Western UP Center is a partnership of the Copper Country ISD, Gogebic-Ontonagon ISD and Michigan Technological University (MTU). Staff spent considerable time fostering a wide variety of partnerships to provide quality programming to the 19 school districts in the service area. These partnerships are crucial to the continued operation of the Center. The Center collaborated with various entities to submit six grant proposals to maintain math and science programs for the 2007-08 school year. The Center collaborated with faculty at MTU, Boston Museum of Science, American Society for Engineering Education, and the Foundation for Family Science to submit a proposal to the National Science Foundation (NSF) for a Family Engineering Program. The Center also collaborated with faculty at MTU to submit another grant to NSF for the Global Watershed Project. The Center brought together businesses, community organizations and MTU faculty to successfully receive funding from Great Lakes Fishery Trust to plan the Lake Superior Stewardship Initiative, which will engage schools and their communities in place-based learning opportunities.

Students and faculty from MTU and Finlandia University provide a tremendous volunteer resource for conducting student programs such as Western UP Science Festival, TiViTz tournament, family science nights, and community programs. In addition, the expertise of MTU faculty is a crucial component to the success of the Center's summer institute program. Staff works closely with MTU faculty to provide the teachers with relevant ways to present cutting edge technology to their students.

For more information, contact Shawn Oppliger, shawn@copperisd.org