



AMA/Iosco Math/Science Center 2014-2015 Annual Report

The AMA/Iosco Math/Science Center covers two ISDs (four counties) in northeastern Michigan. Serving eight school districts and partnering with the Northeast Michigan Great Lakes Stewardship Initiative.

Overview of the Year’s Accomplishments

In 2014-2015, the AMA/Iosco MSC had a clear focus on supporting teachers in the shift towards student-centered mathematics as described by the Standards for Mathematical Practice. This was done through professional learning opportunities and curriculum development and support.

The AMA/Iosco MSC had the unique opportunity to host a national-level speaker, Joanie Funderburk, to speak on the Math Practices in a Mathematics Symposium on Saturday, April 11, 2015. In a partnership with Alpena Community College, the AMA/Iosco MSC organized and funded this Saturday professional learning

Joanie Funderburk, a national-level speaker, spoke on Math Practices during a Mathematics Symposium.

event. This event consisted of the keynote address by Mrs. Funderburk in the morning, followed by afternoon

breakout sessions led by local and statewide leaders in math education. This was an important milestone for math education in NE lower Michigan since area teachers normally have to travel three or more hours to hear a national-level speaker, which often does not happen due to financial restrictions. Also, it represented the first major collaboration between the AMA/Iosco MSC and Alpena Community College.

Additionally, in 2014-2015, elementary teachers in AMA ESD received grade-level specific curriculum support and professional learning about how to incorporate specific Math Practices into daily lessons. This year, the focus was on Math Practice 1, make sense of problems and persevere in solving them, and Math Practice 3, construct viable arguments and critique the reasoning of others, which are overarching Math Practices, applicable in many capacities and subject areas. Teachers not only learned about

the characteristics of each Math Practice, but they also created specific classroom routines to support each Math Practice in their rooms on a daily basis.

Both elementary and secondary teachers were also engaged in curriculum development with a focus on the Math Practices. At the elementary level, most districts in the AMA ESD have curriculum aligned to the Michigan State Standard, which include the Standards for Mathematical Practice. However, this aligned curriculum has an unfocused view of the Math Practices, showing where every Math Practice might possibly be highlighted instead of having a “helicopter view” of trends by concept, unit, or grade level. Elementary teachers broke down and unpacked the content of each unit, looking for trends and themes across time. They used this information to develop a curriculum guide for implementing the Math Practices for each grade level. This will lead to more focused, coherent conversation around the Math Practices at each grade level, for each student.

At the secondary level, most districts in the AMA ESD do not have curriculum aligned to the Michigan State Standards. Therefore, their work consisted of adapting outdated curricular materials to align to the Math Practices. This

Districts adapted outdated curricular materials to align to the Math Practices.

included examining content by marking period, outlining which Math Practice lends itself to supporting the math content being taught.

In conclusion, the AMA/Iosco MSC is in the second year of a three-year focus on the Math Practices. The goal at the end of 2015-2016 is to have all math teachers K-12 with the knowledge of the Math Practices as well as the curricular resources needed to support the Math Practices in their classrooms daily.

Organization of the Report

The Strategic Plan identifies six service areas: Leadership, Professional Learning, Student Services, Curriculum Support, Community Involvement, and Resource Clearinghouse. This report will focus on Professional Learning and Student Services for the entire service area. In addition, there will be a narrative on closing the achievement gap describing services to Priority and Focus School(s) in the area, including successes and challenges.

REGION-WIDE PROFESSIONAL LEARNING

Goal: For educators who participate in Center Professional Learning to reflect best instructional practices in their own settings.

Who participated in the professional learning?

Professional learning opportunities were provided for classroom teachers, classroom support staff, administrators, parents/community members, and others involved in K-12 education. The table below describes who participated.

Table 1: Participants Receiving Professional Learning

Participants			Reported Gender		Position					
			M	F	Admin	Math Tchr	Sci Tchr	Tech Tchr	Comb Subj	Other or Unknown*
Pre-School	1	2	0	1	0	0	0	0	0	1
Elementary	113	941	9	104	1	0	0	0	99	13
Middle/Jr. High	18	120	5	13	0	3	1	0	0	14
High School	11	122	4	7	1	2	1	0	0	7
K-12 Mixed Levels	12	56	2	10	0	0	0	0	1	11
Other*	12	78	3	9	0	0	0	0	0	12
Total	167	1,319	23	144	2	5	2	0	100	58

*Other includes persons who work across levels, are not teachers or administrators, or did not indicate position.

Professional learning was delivered in many ways, depending upon the identified needs. Two primary formats included: (1) **Single events**, lasting for a portion of one day to several consecutive days, focused on a particular topic, skill, or issue; and (2) **Series**, which were a series of sessions (one building on the previous one and conducted periodically over a several week/month period). The goal was to systematically strengthen teaching practices based on local needs and current research.

Teachers who participated in AMA/IOSCO M/S Center activities received, on average, 7.9 hours of professional learning related to mathematics.

Table 2 below details the number of sessions offered for each subject by grade level as well as total hours and total number of participants in the sessions.

Table 2: Professional Learning Activities

		Math	Total
Elementary	Activities	24	24
	Hours	63.5	63.5
	# Participants	265	265
Middle/Jr. High	Activities	1	1
	Hours	1.5	1.5
	# Participants	6	6
Middle/Jr. High & High School	Activities	3	3
	Hours	29	29
	# Participants	23	23
Other (includes mixed levels)	Activities	1	1
	Hours	5	5
	# Participants	86	86
Total	Activities	29	29
	Hours	99	99
	# Participants	380	380

Spotlight on Professional Learning

The AMA/Iosco MSC had the unique opportunity to host a national-level speaker, Joanie Funderburk, to speak on the Math

Joanie Funderburk, a national-level speaker, spoke on Math Practices during a Mathematics Symposium.

Practices in a Mathematics Symposium on Saturday, April 11, 2015. In a partnership with

Alpena Community College, the AMA/Iosco MSC organized and funded this Saturday professional learning event. This event consisted of the keynote address by Mrs. Funderburk in the morning, followed by afternoon breakout sessions led by local and statewide leaders in math education.

The keynote addressed was themed “Promises We Intend To Keep,” with a focus on the NCTM book *Principles to Action*. Teachers were pushed in their current thinking of what math education has been in our country, and examined what the new, more rigorous Michigan State Standards require of our children. These standards are not just promises we are making to our children, communities, state, and nation that we will make a change in our teaching practices, but *promises that we intend to keep*.

Afternoon breakout sessions included targeted sessions based on the need of math teachers in AMA and Iosco. These included upper elementary fraction support by a state-level math leader, RtI in elementary math by a state-level math leader, engaging parents in the educational process by a local leader, using Google Classroom in the secondary math classroom by a local leader, and facilitating the math workshop model by a local leader. Participants could choose which breakout sessions they attended.

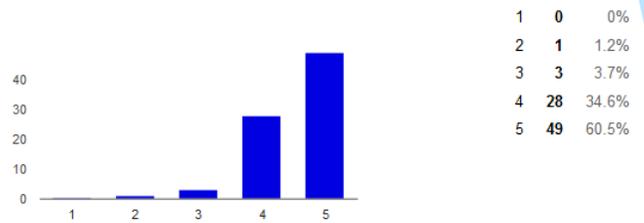
This event was an important milestone for math education in NE lower Michigan since area teachers normally have to travel three

or more hours to hear a national-level speaker. Also, it represented the first major collaboration between the AMA/Iosco MSC and Alpena Community College.

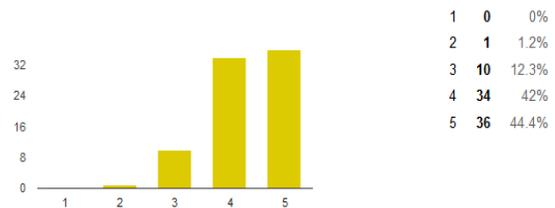
Over 100 area math teachers participated in the Symposium. Some outcome results are shown below.

Over 100 area math teachers participated in the Symposium.

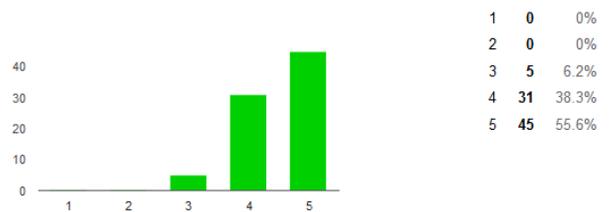
This day met my expectations.



I have a deeper understanding of what the Standards for Mathematical Practice (SMP) are.



I can see practical applications of the SMPs for my classroom.



Overall this day was...



Closing the Achievement Gap

The AMA/Iosco MSC has primarily supported the Focus Schools in the service area by providing cohesive work in the School Improvement Process. This extensive process included the MSC Director analyzing student achievement data, administering and reviewing a needs assessment, and writing and collaborating on School Improvement activities designed to meet the outlined needs.

MSC supported Focus Schools by providing cohesive work in the School Improvement Process.

After several rounds of writing School Improvement activities with representatives from the Focus School, the AMA ESD brought in school-level School Improvement Teams to assist in the actual creation of School Improvement plans.

This collaborative process shows support of targeted, school-wide goals to help support not only the Focus School in the service area, but also all schools in the AMA ESD.

Spotlight on Partnerships

The AMA/Iosco MSC has made a conscious effort to partner with Alpena Community College in 2014-2015, and beyond, to increase communication about the changes in math education as described by the Michigan State Standards. This year, that collaboration manifested itself into a day-long professional learning event, open to area K-12 educators, Community College professors and pre-service Community College education students. This professional learning event highlighted the changes in math education as described by the Standards for Mathematical Practice, which, for the most part, Alpena Community College professors were unaware of. Since a large percentage of Alpena Community College's student enrollment comes from the AMA ESD, it is imperative that this partnership continue to best meet the needs of our area students K-16.

MSC formed a partnership with Alpena Community College.

The STEM Partnership has allowed for opportunities for the AMA/Iosco MSC to collaborate with both the Northeast Michigan Great Lakes Stewardship Initiative as well as the Thunder Bay National Marine Sanctuary.

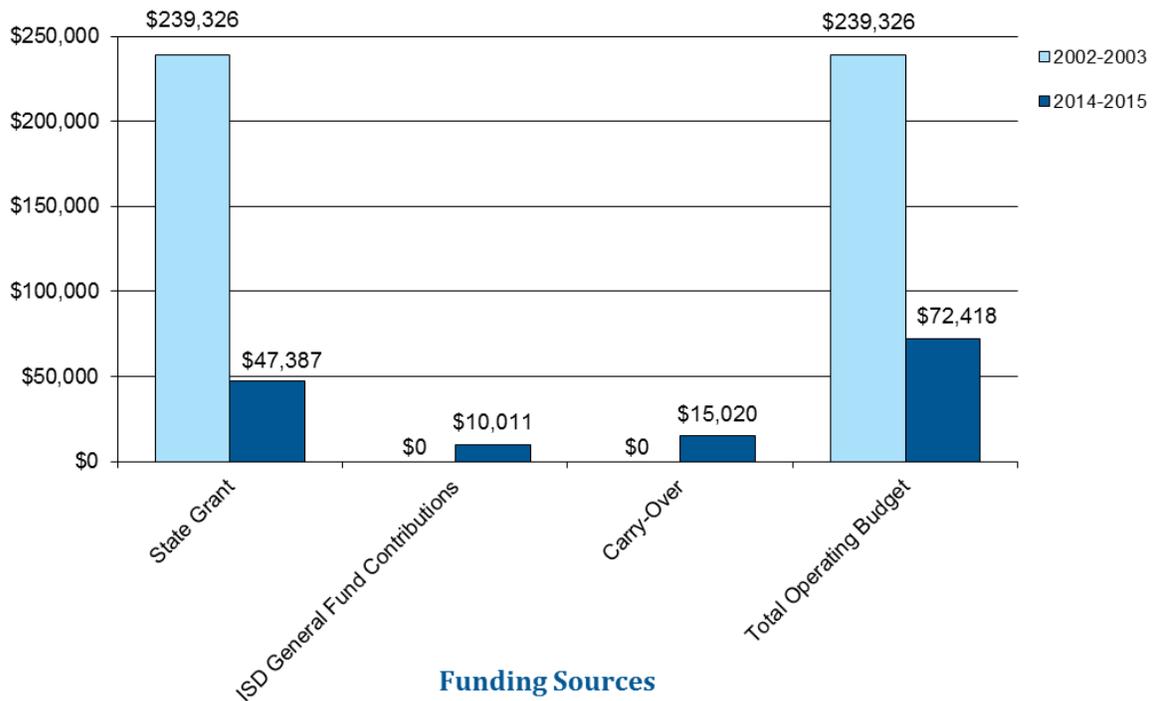
The NE MI Great Lake Stewardship Initiative is a regional network of education and community partners working to promote quality place-based education opportunities in northeast Michigan for the benefit of our youth, our community, and our environment.

The Thunder Bay National Marine Sanctuary education and outreach programs are designed to raise public awareness about the sanctuary and its resources, encourage public involvement in resource protection, increase knowledge about Great Lakes maritime history, and expand ocean and Great Lakes literacy.

Director's 2014-2015 Budget Discussion

The AMA/Iosco MSC has undergone a few transitions over the last two years. The major transition causing budgetary stress has been in the Director's position. Because of attrition and budgetary constrictions, the Director's position and responsibilities have been absorbed into the previously full-time Math Consultant's position. This has caused a redefinition of her job description and impacted her ability to provide content-specific support.

Changes in AMA/Iosco M/S Center's Financial Support



Director's Summary 2014-2015

The role of Director of the AMA/Iosco Math and Science Center has been under transition for some time. The previous Director had a clear strength in science and place-based education. However, when the place-based student service program closed in the area, the Director was left to focus on the other areas of the Strategic Plan, namely professional learning. Her strength was science education, but that transition happened at the time the Common Core State Standards for mathematics and English language arts were adopted. This posed a large challenge for our area, so desperately in need of professional learning on the new standards, but without a mathematics leader to do so.

This year, the role of Director has transitioned to the Math Consultant. The Math Consultant had been in that position for a little more than a year, transitioning directly from the classroom. She was still establishing what it meant to be an educational consultant, and now has absorbed the additional duties of being a MSC Director. This transition is happening while new science standards are up for adoption. Therefore, the same challenge is presented: a math leader in the Director position when the area desperately needs a science leader.

The new Director has made a pointed attempt at working with adjoining Mathematics and Science Centers to provide quality science professional learning opportunities for area teachers. However, because of the Network's focus on science for the next few years, the ill-defined position, and the lack of experience of the new Director, there are many challenges.

The new Director has a three-year focus plan on supporting teaching in implementing the Standards for Mathematical Practice. As districts are transitioning to Michigan State Standards-aligned curriculum, the focus on the practices ensures that area teachers and administrators are actually shifting our instructional practices to meet the higher, more rigorous standards, and not just buying a new, shiny book.

The new Director is a part of several statewide and national-level organizations, including MCTM, NCTM, NCSM, M2C2, MAISA MLT, a (Mi)2 statewide work group on RtI in math education, and the Northern Michigan Learning Consortium.

This report was developed through a grant awarded by the Michigan Department of Education.