Strategic Plan Incorporating Quality Indicators
October 2005-September 2006

The Western Upper Peninsula Center for Science, Mathematics and Environmental Education provides services to 20 school districts in the Copper Country Intermediate School District (CCISD) and Gogebic-Ontonagon Intermediate School District (GOISD). The center provides programming in six basic service areas: leadership, student services, professional development, curriculum support, resource clearinghouse and community involvement.

This strategic plan was created with Quality Indicators and the Michigan Mathematics and Science Center Network Master Plan as a basis and to meet the needs of students and teachers in the Center’s service area. Information about the educational needs of the teachers and students was gathered from a formal needs assessment of teachers, program evaluations, along with input from administrators’ roundtables.

LEADERSHIP

Performance Effectiveness Indicator
The Center will assess needs, leverage resources, and promote collaboration in improving mathematics and science education.

Five Year Goals

L1. The Center will influence policy for mathematics and science education in the region, state and nation, by actively participating in the Michigan Mathematics and Science Centers Network.

L2. The Center will exert leadership in coordinating educational activities in the CCISD and GOISD to provide equal access to services that meet the needs of teachers and students in the service area.

L3. The Center will provide leadership for schools in the CCISD and GOISD by participating in State Wide Initiatives to improve mathematics and science education.

L4. The Center will provide leadership in establishing partnerships and programs throughout the Michigan, Upper Peninsula and Great Lakes region.
## Focus of 2005-2006 Programming

**L1.** The Center will influence policy for mathematics and science education in the region, state and nation, by actively participating in the Michigan Mathematics and Science Centers Network.

<table>
<thead>
<tr>
<th>Planned Programming and Services</th>
<th>Assessment Question for Center Performance Effectiveness</th>
<th>Data to Collect</th>
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<tbody>
<tr>
<td>Participate in professional development and leadership activities of the Michigan Mathematics and Science Center Network.</td>
<td>Does participation in the Michigan Mathematics and Science Center Network influence programming in the Center’s service area?</td>
<td>Document participation in the network activities.</td>
</tr>
<tr>
<td>Participate on the Evaluation Committee of the Michigan Mathematics and Science Center Network.</td>
<td>Does participation in the Evaluation Committee allow the Michigan Mathematics and Science Center Network to be more effective?</td>
<td>Meeting minutes of activities of the Evaluation Committee.</td>
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**L2.** The Center will exert leadership in coordinating educational activities in the CCISD and GOISD to provide equal access to services that meet the needs of teachers and students in the service area.

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<td>Collaborate with school districts, community organizations, local businesses, Michigan Technological University (MTU), and Finlandia University to coordinate teacher and student activities. Maintain an email list-serve to provide teachers with information on professional development opportunities and student services.</td>
<td>Does collaboration result in more students and teacher programs in the Center’s service area. Does the email list-serve provide an effective way for teachers to receive information?</td>
<td>Document programs that are result of collaborative efforts with other organizations. Survey teachers concerning email list-serve effectiveness.</td>
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**L3.** The Center will provide leadership for schools in the CCISD and GOISD by participating in State Wide Initiatives to improve mathematics and science education.

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<tr>
<td>The Center will implement the activities of the Michigan Mathematics Leadership Academy (MMLA) in Center’s service area. The Center will implement the activities of the Michigan Science Leadership</td>
<td>Does the MMLA provide high quality professional development for teachers in Center’s service area? Does the MSLA provide high quality professional development for teachers</td>
<td>Collect workshop agendas and evaluations. Collect workshop agendas and evaluations.</td>
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Academy (MSLA) in the Center’s Service area.

The Center will provide professional development to teacher in the region on the Michigan Environmental Education Support (MEECS) materials.

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<td>Collect workshop agendas and evaluations.</td>
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STUDENT SERVICES

Performance Effectiveness Indicator
Students impacted by Center programs demonstrate progress toward mathematics and science literacy and elect to participate in mathematics and science opportunities in greater numbers.

Five-Year Goal

SS1. The Center will work with MTU, area schools and community organizations to support, develop and implement standards based interdisciplinary programs that engage students in higher order thinking, substantive conversation and real world applications.

Focus of 2005-2006 Programming

SS1. The Center will work with MTU, area schools and community organizations to support, develop and implement standards based interdisciplinary programs that engage students in higher order thinking, substantive conversation and real world applications.
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<td>Develop and implement the Western Upper Peninsula Science Fair for students in grades fourth through eighth.</td>
<td>Does the science fair develop understanding of the scientific method?</td>
<td>Interviews with students and examples of student work.</td>
</tr>
<tr>
<td>Work with local schools to development and implement science fairs in their own buildings.</td>
<td>Do the local science fair develop understanding of the scientific method.</td>
<td>Interviews with students and examples of student work.</td>
</tr>
<tr>
<td>Develop and implement after-school classes for K-8 grade students focusing on real world applications of science, mathematics, environmental stewardship and technology.</td>
<td>Do after-school classes motivate students to participate more science and mathematics opportunities?</td>
<td>Program evaluations given to students.</td>
</tr>
<tr>
<td>Coordinate and support FIRST LEGO League teams in the CCISD and GOISD.</td>
<td>Does FIRST LEGO League engage students in problem solving activities?</td>
<td>Interviews with students and examples of student work.</td>
</tr>
<tr>
<td>Coordinate and conduct forest, pond and winter ecology field trips for students and teachers at school forests, state parks, and local wildlife areas.</td>
<td>Do field trips promote understanding of ecosystems and promote environmental stewardship?</td>
<td>Program evaluations given to students.</td>
</tr>
<tr>
<td>Develop and implement “We Can Make A Difference” Earth Day Program.</td>
<td>Does the Earth Day promote environmental stewardship?</td>
<td>Program evaluations and surveys given to students.</td>
</tr>
</tbody>
</table>
PROFESSIONAL DEVELOPMENT

Performance Effectiveness Indicator for Professional Development:
Educators who participate in Center Professional Development reflect best instructional practices in their own setting.

Five-Year Goals:

**PD1.** The Center will provide high quality professional development opportunities that help teachers implement the state and national standards and model effective teaching.

**PD2.** The Center will partner with various departments at MTU to offer high quality professional development opportunities to teachers in the service area.

Focus for the 2005-2006 Programming

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<td>Develop and implement the New Teacher/ Mentor Workshop Series.</td>
<td>Does the New Teacher/ Mentor Workshop Series help new teacher be more confident in the classroom?</td>
<td>Workshop evaluations and teacher surveys.</td>
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<tr>
<td>Conduct teacher workshops on the Michigan Environmental Education Curriculum Support (MEECS) during the summer of 2006.</td>
<td>Do the MEECS workshops prepare teachers to implement the MEECS units in their classrooms?</td>
<td>Workshop evaluations and teacher surveys.</td>
</tr>
<tr>
<td>Provide quality and sustained professional development on lesson study and mathematics content to teachers in the service area through the Building Bridges project</td>
<td>Does the Building Bridges project increase the content knowledge of the participating teachers?</td>
<td>Pre and post tests of the participating teachers’ content knowledge.</td>
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<td>Does the Building Bridges project improve the teaching and learning of mathematics?</td>
<td>Classroom observations of participating teachers.</td>
</tr>
<tr>
<td></td>
<td>Does the Building Bridges project improve student achievement in the classrooms of the participating teachers?</td>
<td>Pre and Post tests of the students’ mathematics knowledge and skills</td>
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<tr>
<td></td>
<td>Do the participating teachers have a better understanding of Inquiry and how to implement an inquiry lesson in their classroom?</td>
<td>Pre and post tests of participating teachers.</td>
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Develop and implement professional development on Inquiry in the Science Classroom.
PD2. The Center will partner with various departments at MTU to offer high quality professional development opportunities to teachers in the service area.

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<td>Develop and implement the workshop series on Cultural Diversity and Equity in the Classroom.</td>
<td>Does this workshop series provide teachers with the tools to implement Equity in their classroom?</td>
<td>Workshop evaluations and teacher surveys.</td>
</tr>
<tr>
<td>Develop and implement the Educators Science and Mathematics Institute Series in Mathematics.</td>
<td>Does this institute provide teachers with resources and strategies to engage students in real world applications of mathematics?</td>
<td>Examples of unit plans created by participating teachers.</td>
</tr>
<tr>
<td>Develop and implement the Global Climate Change Institute.</td>
<td>Does this institute provide teachers with resources and strategies to engage students in the scientific research on climate change?</td>
<td>Examples of unit plans created by participating teachers.</td>
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### CURRICULUM SUPPORT

**Performance Effectiveness Indicator**  
Districts will develop and implement aligned curriculum in mathematics and science classrooms.

**Five Year Goals**

**CS1.** The Center will cooperate with schools in the CCISD and GOISD to implementing their school improvement plans and improving student achievement.

**CS2.** The Center will work with local schools and districts to align their mathematics and science curriculum and instructional materials to the Michigan Content Standards and Benchmarks and Grade Level Content Expectations. Professional development will be delivered to give teachers the training and resources to implement the curriculum effectively and engage students in authentic learning and assessment.

### Focus of the 2005-2006 Programming

**CS2.** The Center will work with local schools and districts to align their mathematics and science curriculum and instructional materials to the Michigan Content Standards and Benchmarks and Grade Level Content Expectations. Professional development will be delivered to give teachers the training and resources to implement the curriculum effectively and engage students in authentic learning and assessment.

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<tr>
<td>Provide professional development on the Mathematics Grade Level Content</td>
<td>Does this professional development provide teachers with instructional and</td>
<td>Workshop evaluations and teacher surveys.</td>
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Expectations (GLCE) through MIGLANCE.

Provide professional development on the High School Initiative.

assessment tools to implement the GLCE?

Does this professional development give teachers and administrators a better understanding of the High School Initiative?

Workshop evaluations and teacher surveys

COMMUNITY INVOLVEMENT

Performance Effectiveness Indicator
Individuals and groups from the community understand and support the goals and activities of the Center.

Five Year Goals

C1. The Center will develop and implement programs in science and mathematics education for the local community.

C2. The Center will seek community partnerships, support and involvement in developing center programming to enhance the teaching and learning of science, mathematics and environmental education.

C3. The Center will communicate to stakeholders and the community, the value of the Center’s programming in promoting literacy in science, mathematics and environmental stewardship.

Focus of 2005 2006 Programming

C1. The Center will develop and implement programs in science and mathematics education for the local community.

Planned Programming

Develop and conduct Family Science and Math Nights to be held at elementary schools in the CCISD and GOISD.

Develop and conduct the Science Festival for students, parents and younger siblings at the Western UP Science Fair.

Develop and conduct Environmental Stewardship and Sustainability workshops.

Assessment Question for Center Performance Effectiveness

Do family science nights encourage family involvement in their children’s education?

Does the science festival encourage family involvement in their children’s education?

Do the workshops give the participants a better understanding of environmental stewardship and sustainability?

Data to Collect

Parent surveys

Parent surveys

Participant surveys

C3. The Center will communicate to stakeholders and the community, the value of the Center’s programming in promoting literacy in science, mathematics and environmental stewardship.

Planned Programming

Assessment Question for Center

Data to Collect
The Center will maintain and utilize email list-serves of teachers and administrators to provide information about professional development opportunities, student programs, community programs and curriculum issues.

The Center will maintain a website that contains current information about programs, resource clearinghouse and links to useful educational websites.

**Performance Effectiveness**

Are the email list-serves an effective way to distribute information about programming?

Is the website an effective way to distribute information about programming?

Teacher and administrator’s surveys.

Teacher, community and administrator’s surveys

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**RESOURCE CLEARINGHOUSE**

**Performance Effectiveness Indicator**
Center will assess needs and provide resources that promote improvement in science and mathematics education.

**Five-Year Goals**

**R1.** The Center will provide teacher resources that support standards based instruction and authentic assessment.

**R2.** The Center will maintain and utilize email list-serves of teachers and administrators to provide information about professional development opportunities, student programs, community programs and curriculum issues.

**R3.** The Center will maintain a website that contains current information about center programs, resource clearinghouse and links to useful educational websites.

**Focus of 2005-2006 Programming**

**R1.** The Center will provide teacher resources that support standards based instruction and authentic assessment.

**Planned Programming**

Maintain a lending library of standards-based activity guides, children literature, activity kits and equipment.

**Assessment Question for Center Performance Effectiveness**

Do teachers from all districts in the service area use the lending library?

**Data to Collect**

Records of what materials and equipment is checked out.
The Michigan State Board of Education has identified five Strategic Initiatives vital to ensuring a quality education for all children. The Western Upper Peninsula Center for Science, Mathematics and Environmental Education will focus on the Initiative of “Ensuring Quality Educators”. The Western UP Center will provide programs, resources and support to teachers in our service area to address the action plan outlined for this Initiative by the State Board of Education Task Force.

The State Board of Education has adopted the Strategic Goal “Attain substantial and meaningful improvement in academic achievement for all students/children, with primary emphasis on chronically under performing schools and students.” Research indicates the most effective way to improve student achievement is to improve teacher quality. The goal of the professional development programs and teacher support provide by the Western UP Center is to help entry level and experienced teachers to become more effective educators. The programs that will be develop and implemented for the 2005-2006 school year are positive steps in accomplishing that goal.

All professional development activities at the Western UP Center are developed to help teachers implement the content, teaching and learning, and assessment standards from Michigan Curriculum Frameworks and improve student achievement in their classrooms.

The Center will implement the New Teacher/Mentor Workshop Series. This series will provide important training for new teachers and their mentors as they work together to build a quality learning environment for students.

The Center in collaboration with other Math/Science Centers in the UP, Michigan Technological University, Northern Michigan University and Lake Superior State University will provide intensive quality professional development in mathematics through the Building Bridges Project. This project is funded by the federal 2005-2006 Title II Part B Mathematics & Science Partnership Competitive Grant Program.

The Center will participate in the Michigan Mathematics Leadership Academy and Michigan Science Leadership Academy. The Center will implement the training initiatives for these academies for elementary and secondary teachers. These initiatives will focus on implementing standards-based instruction. Modeling of teaching and learning standards and assessment standards is an integral part of the initiatives by providing training on activities that promote higher order thinking, incorporating writing into the math and science curriculum and building problem solving skills.

The Center will provide professional development programs on the Michigan Environmental Education Curriculum Support Units. These units were created to give teachers the resources to teach science and social studies standards through environmental education activities.

The Center will maintain a resource clearinghouse for teachers. The clearinghouse contains activity guides, children’s literature, activity kits and equipment that support standards-based instruction, authentic assessment and integration of technology into classroom instruction. These resources are available for checkout through the Center located in the Copper Country ISD and delivered to schools through the Regional Education Media Center 1 (REMC 1) inter-school mail system. REMC1 services schools in the CCISD and
GOISD.