## SMART 2012 Team Report (2011-2012)

### Team Members: Carol Burch

<table>
<thead>
<tr>
<th>Team Name: Entergy MST</th>
<th>Write the number of Teacher participants for each period.</th>
<th>Academic Year number(s)</th>
<th>Summer Institute number(s)</th>
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### Team location and focus
Hannibal High School: 21st Century Skills, Technology Integration, and PBIL focus

### Data collected and analyzed on teacher learning:

Professional development during this grant period focused on mathematical connections for physics students, integrating supportive technology tools, and developing real world and PBIL learning experiences. Approximately 115 hours of NASA/Georgia Tech ePDN courses were completed that included a capstone project for developing a Moodle based climate change independent study for Hannibal HS students, two courses on STEM Statistics, and 2 courses on PBIL. Classroom strategies that better supported the learning and skill development of all of my students were acquired in this coursework and form technology conference attendance (ISTE2011 and NYSCATE 2011).

Two college math courses for 7 semester hours were also completed during this period to support instructional practice.

Professional development efforts that focused on the technology integration, mathematical applications, and inquiry learning in the context of the Common Core greatly increased my ability to provide supports, structure, and present interconnected real world themes to my students, fostering critical thinking, peer collaboration, time management, and their understanding of issues in the world they face in the future.

### Data collected and analyzed on student learning:

**College Physics:**
Goal setting was used through the school year with college physics, planning strategies for achieving goals and reflecting on exam results. I found that this second year of using goal setting cards and graphs to track progress had a positive impact on student success in PHY103, moving even struggling students forward throughout the year and increasing the PHY103 final exam average up by 3 points over the previous year’s average scores (same exam).

Wiki statistics showed that nearly all of my students used the wiki resources at least once a week by midyear and they self reported that they felt the pencasts that provided critical homework hints and the linked resources helped them make sense of challenging concepts. They said that the homework hints helped them complete assignments that they would not have known where to begin with otherwise. I also posted Smartboard class notes each day after class for 24/7 student access and found that they were used by many students to help them better focus their in class attention knowing that they had complete notes available at home.

**RSP9:**
With a focus on geospatial technologies and energy, students were given pre and post basic topography skills assessments. Growth was shown strongly in the areas of map interpretation, with over 60% showing improvement in relative locations, map scale, and identifying features of the land. Student attendance improved during the GIS activity period, with more than 80% of the class attending each
day, up from 60 to 70% prior to the GIS unit. For two students in particular, attendance went from approximately 25% to nearly 90% as we started the GIS work. Their attendance remained excellent for the rest of the school year as well. Students showed better behavior, higher interest, and were increasing the participation in class discussions during the GIS work. Remarkably, students using My World GIS developed good analytical tool use skills to create new layers from data that has had querying operations performed. For example, students could use a shape of the region to select out all of the type “X” features within the region that also contained “Y” features. The class could provide direction to the teacher displayed GIS map to complete selected operations to answer specific questions. This is truly remarkable for these academically challenged students!

Note: Regents Physics exam scores will be analyzed after the test is completed June 2012