

Implementation

Research takes place at MA²S every Wednesday. Both classroom blocks are used during data collection, and some phases of data analysis and writing. On other Wednesdays only one of the blocks is used. Research counts as 25% of a student's grade with 12.5% applied to math and 12.5% to science.



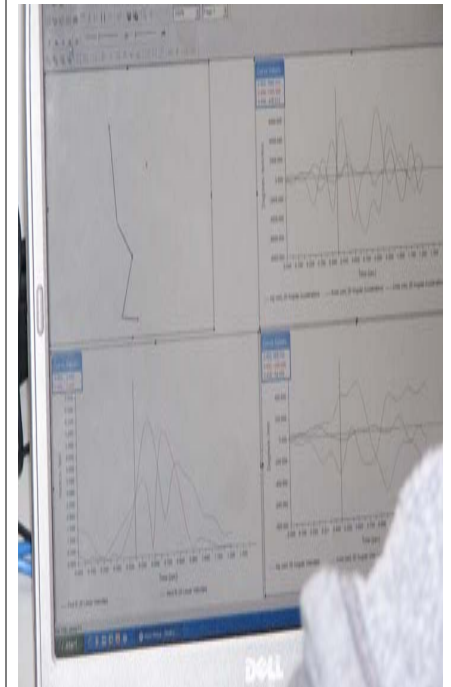
A Dynamic and Unique Environment for Optimal Learning

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Student Research Program



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Student Research



Students conduct independently designed research projects each of their four years at MA²S. Groups of up to four students design studies around topics of their choosing.

The process begins the first week of school with group selection and ends in April and May with a presentation to all MA²S students and faculty, administrators from home schools, parents, and business professionals.

Former students have received employment as undergraduate researchers at Oakland University, Wayne State University, Rensselaer Polytechnic Institute, and the University Illinois (student is actually a student at Kalamazoo College and received this distinction following his sophomore year, even though the position was advertised for seniors). Other students have received full tuition to enroll in doctoral programs at prestigious universities such as the University of Notre Dame. Others have had opportunities to study with professors in Europe and South America. All have said that the MA²S research process made these things possible.



The Process

- Select Groups
- Propose Ideas to Teachers
- Literature Review
- Background Science
- Set up and build—1 week
- Collect data—9 weeks
- Analyze data—3 weeks
- Write—6 weeks
- Create Final Presentation—3 weeks
- Mid April—Presentations
 - Seniors first week
 - Juniors second week
 - Sophomores third week
 - Freshmen fourth week



Example Projects—2007-2008

- Effect of Temperature on Function of Restriction Enzymes EcoRI and HindIII
- Effect of Catapult Lever Arm Length on Launch Distance
- Effect of Trebuchet Counterweight on Launch Distance
- Effect of Wearing Time on Ease of Removal of Fingernail Polish Using Horse Hooves as Collagen Model
- Effect of Dyeing on Tensile Strength of Hair
- Effect of Bat Angle on Travel Direction of a Softball
- Effect of Time-After-Purchase on Acid's Ability to Eliminate Bacteria from Lunch Meat

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