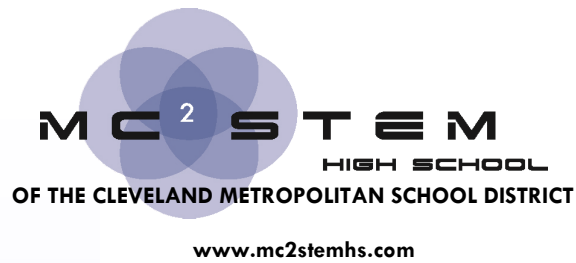


## Head of School

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## School Guidance Counselor

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## Main Office

GE Lighting, Nela Park  
1975 Noble Road, Bldg. #336  
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Tel: (216) 744-1512  
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**SCHOOL CODE: 365243**

## SCHOOL DESIGN

- ◆ MC<sup>2</sup>STEM High School is based on Ohio H.B. 119 and is part of the Ohio STEM Learning Network (OSLN).
- ◆ Regional High School
  - ◇75% of seats reserved for CMSD students
  - ◇25% of seats for students within Cleveland-area communities
- ◆ Multi-campus high school
  - ◇9<sup>th</sup> grade is located at the Great Lakes Science Center with NASA as a community partner
  - ◇10<sup>th</sup> grade is located at and partnered with GE Lighting (NELA Park)
  - ◇11<sup>th</sup> and 12<sup>th</sup> grade are located at CMSD swing space in Downtown Cleveland
- ◆ Project-based school focuses on issues of energy and sustainability
- ◆ Year round school – 10 weeks on and 3 weeks off
- ◆ Admission by application and lottery, no enrollment criteria
- ◆ 9<sup>th</sup> and 10<sup>th</sup> Grade credit based on mastery, not seat time
  - ◇Successful completion of 90% or higher = mastery
  - ◇<90% = work in progress
  - ◇Students must obtain mastery on every mastery assignment for a course to receive credit
- ◆ Embedded partners include: GE Lighting, NASA, The Great Lakes Science Center, Cleveland State University, and Case Western Reserve University
- MC<sup>2</sup>STEM High School currently operates a Fab Lab at each of its three school locations and a mobile fab lab.
- 40% of 11<sup>th</sup> graders and over 50% of 12<sup>th</sup> graders are taking the equivalent of a full time college course loads at TRI-C or CSU.

## DISTRICT OVERVIEW

Cleveland Metropolitan School District (CMSD) is Ohio's second largest school district and its' approximately 45,000 students are 70% Black, 15% white, 11% Hispanic and 3% other. 83% of the student body is at poverty level and 100% is eligible for the federal universal meals program. The district serves 2,000 homeless students. Multilingual services are offered in 30 languages and 4,623 students speak a language other than English. There is a high mobility rate of 38.2% of students transferring in or out of school in the course of a year, creating instability and discontinuity. 21% of students qualify for special education services versus the national average of 12%. The graduation rate has declined from 60% in 2006/07 to 53.7% in 2007/08. The average ACT test score in 2008 was a 16, well below the 20 level for workforce readiness and 21 for college readiness.

## SCHOOL OVERVIEW

MC<sup>2</sup>STEM prepares high school students for 21<sup>st</sup> century workforce demands by exposing them to the kinds of design and implementation challenges and practices that are presented in today's STEM industries. Students build the critical thinking and problem-solving skills necessary to effect change as they grapple with these challenges, wrestle with questions, formulate ideas, and defend perspectives alongside their instructors, peers, and field experts. Implementing a year round school calendar model, with 10-week quarters and 3-week breaks, gives students a more college-level or professional experience and it is an effective way to reduce learning loss that often occurs over long summer breaks.

## ACADEMIC PROGRAM

Since August of 2008, this high school has grown by one grade level each year. Ninth, Tenth, Eleventh, and Twelfth grade students are embedded in different regional STEM campuses. The ninth graders are hosted at the Great Lakes Science Center where they work intensely with both the Great Lakes Science Center and NASA Glenn Research Center. Ninth grade students travel to NASA Glenn Research Center to experience job shadowing, internships, and hands on work with NASA engineers. The tenth grade students attend school at GE Lighting's Nela Park Campus and work intensely with GE employees of all professions. The focus in the first two years is a rigorous integrated curriculum that is informed by a breadth of industry experiences. Students participate in multiple field experiences on the STEM industry campuses where they are immersed in a world of hands-on learning and exploration. By the end of tenth grade, students will have participated in at least five meaningful experiences in the STEM Fields.

The Eleventh and Twelfth grade curriculum is designed to offer students an individualized experiences. Since students spend the first two years of high school exploring STEM fields, by eleventh grade they are ready to identify areas of individual interest. The Junior/Senior experience is informed by Downtown Cleveland which serves as the campus for students. The students' academic experiences include a combination of college courses (when ready) and college preparatory instruction at the Junior/Senior site. Many students will have the opportunity to complete all junior and senior year high school requirements while attending a college campus and interning within a STEM industrial partner. These students are required to participate in structured seminars and ongoing counseling to ensure a successful transition to college upon graduation from High School.



## HIGHLIGHTS

- Recipient of National Council of Urban School Transformation award for excellence (NCUTS)
- Participant in Clinton Global Initiative America for STEM education.
- Awarded an Ohio State ranking of Excellent for student achievement
- ◆ MC<sup>2</sup>STEM High School's Nela Park Campus houses one of the first high school based MIT 'FAB LABs' in the world.
- ◆ The MIT 'FAB LAB' (fabrication lab) allows students to make almost anything. The lab is networked via videoconference to view and interact with the other MIT FAB LABs around the world.
- ◆ 2009 Green Building of America Award
- ◆ Featured in Cleveland Crain Magazine.
- ◆ Featured in Ohio News Network (Ohio Business Means)
- ◆ School was identified by the CEO of The Gates Foundation as one of his favorite examples of how, "STEM brings new players into the education sector, and it brings a new kind of pedagogy into the classroom."
- ◆ 100% of 11<sup>th</sup> grade had opportunity to engage in paid internships in STEM fields.
- ◆ Many receive competitive internships and college experiences



## HIGH SCHOOL GRADUATION REQUIREMENTS

### Required Courses

Mathematics (Algebra II, Geometry, Statistics, Pre-Calc)	4 credits
English (English 1, 2, 3, and 4)	4 credits
Science (Phys. Sci, Physics, Bio, Chem, Sci Elect)	5 credits
Social Studies (World, American, Govt)	3 credits
Fine Arts	1 credit
Foreign Language	2 credits
Physical Education	0.5 credit
Health	0.5 credit
Senior Seminar	0.5 credit

### Additional Requirements

+ Completion of GE Sophomore Project, Internship, Senior Project, Portfolio and 60+ hours of Community / STEM Service hours.

### 9-10th Grading Scale

(Mastery of Core Subject Benchmarks)  
M= Mastery (+90%)  
I = In-progress (<90%)

### 11-12th Grading System

A= 90% -100%  
B= 80% - 89%  
C= 70% - 79%  
F= 0% - 69%

## MASTERY LEARNING & ASSESSMENT

MC<sup>2</sup> STEM High School uses Mastery for 9th and 10th Grade students.

Benchmarks: are the specific skill sets and proficiency levels that a student must meet in order to successfully earn a credit in subject. Each subject has a different number of benchmarks and students must master all benchmarks to earn their credit and advance to the next level.

## INSTRUCTION

MC<sup>2</sup> STEM High School is a truly challenging environment. Students will be pushed to do their very best, and instructors will teach to meet the needs of each student. Variations in pace, interest, learning style and multiple intelligences, process, product, and content will occur so that focus remains on benchmarks and skills needed to prepare students for college and the job market.

## COLLEGE PREP

- ◆ MC<sup>2</sup> STEM High School offers a rigorous college preparatory curriculum. The curriculum offers a rigorous approach to the essential problems, crucial achievements, and cumulative knowledge of a variety of important skills. Students have the opportunity to graduate high school with at least two years of college credit completed.

## CORE OPERATING PRINCIPLES

### Own your own potential

Students will be responsible for ensuring that their efforts and goals maximize their unique skills and dispositions

- Measurement standard: engagement

### Master your own path

Students will hold themselves accountable for matriculation towards their career ambition

- Measurement standard: core literacy skills, digital portfolio (learning plan and evidence of performance)

### Make a difference

- Measurement standard: exhibitions of research, growth, and development
- Measurement standard: sustainability and personal action

### Recognize that problems are potential for improvement

- Measurement standard: persistence
- Measurement standard: design, inquiry, invention, and teamwork

### Accept that it is your responsibility to take on issues of sustainability

- Measurement standard: examination of sustainability and global impact
- Measurement standard: social action

## COLLEGES AND UNIVERSITIES ACCEPTING MC2 STEM STUDENTS

Baldwin-Wallace College  
Barry University  
Bowling Green State University  
Brown University  
Capital University  
Carnegie Mellon University  
Case Western Reserve University  
Central State University  
Clarkson University  
Cleveland State University  
College of Wooster  
Colorado College  
Columbia College in Chicago  
Cornell University  
Cuyahoga Community College  
Duke University  
Eastern Michigan University  
Gannon University  
Harvard University  
High Point University  
Indiana University-Purdue University  
Kent State University  
Kentucky State University  
La Sierra University  
Loraine County Community College  
Marietta College  
Marquette University  
Miami University, Oxford  
Michigan State University

Mississippi State University  
Morehouse College  
Ohio Northern University  
Ohio University  
Ohio Wesleyan University  
Princeton University  
Purdue University  
Rensselaer Polytechnic Institute  
Rochester Institute of Technology  
Rose-Hulman Institute of Technology  
Shawnee State University  
Southern Adventist University  
The Ohio State University  
The University of Akron  
The University of Arizona  
The University of Tampa  
University of Cincinnati  
University of Illinois at Chicago  
University of Miami  
University of Michigan  
University of Pennsylvania  
University of Pittsburgh  
University of Toledo  
Walla Walla University  
Washington University in St. Louis  
Xavier University  
Yale University  
Zane State College

## SENIOR AWARDS

- Ron Brown Scholarship recipient
- Gates Millennial Scholarship recipient
- Cleveland Plain Dealer Regional Scholar
- Seniors offered over 6,500,000 dollars of school based scholarships. This is estimated on renewal of scholarships for four year.
- There were 56 separate scholarship offers to of the class of 2012

## Student Internships/Field Experiences

- ◆ Page for Ohio US Senator Sherrod Brown in January 2011
- ◆ Lockheed Martin in the Mission Systems and Sensors Division
- ◆ Turner Construction
- ◆ Rockwell Automation
- ◆ GE Lighting
- ◆ NASA Glenn Research Center
- ◆ Great Lakes Science Center
- ◆ MIT Mobile Fab Lab
- ◆ Over 150 MC2 STEM Students have studied in Biosphere2 with The University of Arizona
- ◆ All students complete GE Lighting Sophomore Project

## OTHER INTERNSHIP OPPORTUNITIES

Alex Community Development Corp., American Winds Flight Academy, Audimute Soundproofing, CAA - Contractors Assistance Association, City Club, Classroom Antics, Cleveland Museum Of Natural History, Cleveland Dept. of Public Health, Cohen & Company, Cosmic Robbins, DAR Public Relations, Funutation Tekademy LLC, GreenField Solar Corp., Highland Software, Hill HARDWARE, Heritage Consulting Group, Inc., Little Tikes Company, March of Dimes, Mercury Summer Stock, Milestones Autism Organization, NEO Restoration Alliance/NEO Solutions Network, Ohio Paving & Construction Co., Open Roads (CityFresh), Organic Spa Magazine, Pinnacle Construction Development Group, Progressive Arts Alliance, Scenarios USA, Inc , Segmint, SkinSense Pro, LLC, St. Lukes Foundation, Starrk Company, Studio Think, Telsource Corporation, ToolingU, Tremont West Development Corporation, Trigram Software, UNcomn.tv Network LLC, and Universe Central Corporation

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### Accept that it is your responsibility to take on issues of sustainability

- Measurement standard: examination of sustainability and global impact
- Measurement standard: social action



Everyday I hear people say that we're not a normal high school. I hear people say that we're spoiled and don't know what a normal high school is like. That we wouldn't survive in a normal one. But I came to a conclusion. We AREN'T a normal high school. And some of us DON'T know what a normal high school is like. But maybe that's not such a bad thing because if you took kids from those so called Normal high schools and put them in our position, chances are they wouldn't survive. Our school history is a lot like producing a huge Hip Hop song. Piece by piece everyone wrote their verses. We all had a voice and part in this. And then as a whole the accomplishments we made together such as Arizona are so much like a chorus of the song. And now finally in our senior year we're mastering the song to be released. Mastering our identity. Mastering our own path. And when graduation year comes everyone will hear our song. They'll hear it every time we get accepted into a college. They'll hear it every time we get hired. They'll hear it every time one of us makes it into medical school. They'll hear it every time one of us is promoted. They'll hear it and will know the list of accomplishments we've made. So many accomplishments they'll think it's a eulogy because in only four years we've done things people spend an entire life time doing. We've tackled capstones head on and our success will lead us to overcoming the biggest capstone of all. Life. MC2 STEM is a child compared to other schools in Cleveland who are in their late 80's. Just like a child we've made mistakes. And just like a child We've fallen a couple times and have scars to show for it. But just like a child we've learned how to walk in our first year. And now just like a child we'll learn how to talk right here in our fourth year. And the world has already learned that we have ALOT to say. Especially since we speak through actions. No matter where we go and No matter what we do during this senior year and after, we're stem students. It's like a tattoo on our lives. The only tattoo that can HELP you get a job. The only tattoo that can't be removed. And I wouldn't remove it for anything. We're more than just a STEM now. We're blooming.

Juan Caminero 2012

*Taken from a speech delivered to  
the Class of 2012*



## Special Thank You to:

*The parents of MC2 STEM students, Case Western Reserve University, Cleveland Metropolitan School District, The Cleveland Foundation, Cleveland State University, College Now, GE Lighting, Great Lakes Science Center, The Gund Foundation, Key Bank Foundation, Lockheed Martin, Minds Matter, NASA Glenn Research Center, Ohio Stem Learning Network, The Thomas White Foundation, TIES, Turner Construction, Rockwell Automation, and Youth Opportunities Unlimited*