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History of the Consortium

The National Consortium of Secondary STEM Schools (NCSSS) was established in 1988 to provide a forum for specialized secondary schools focused on science, technology, engineering, and mathematics (STEM) disciplines to exchange information and program ideas.

Celebrating our 30th anniversary in 2018, the Consortium now includes approximately 80 member schools (high schools), many ‘ranked’ as the best in the country, along with 30 affiliate members (colleges, universities, and summer programs) located in 32 states, that share the goals of transforming mathematics, science, and technology education. The Consortium has expanded membership in 2016 to include international members and corporate members.

The NCSSS mission is to advance STEM education by providing professional development and networking opportunities for educators and learning experiences for students; to serve as a national resource for STEM schools and programs in partnership with educational, corporate, and international organizations; and to inform policymakers on STEM education.

Our vision is to serve as the resource for secondary STEM schools by supporting collaboration and knowledge sharing and providing professional development for teachers and administrators to positively impact student achievement in authentic STEM educational environments.

NCSSS, a 501c3 non-profit organization, holds programs and events to develop STEM talents for students, educators, and administrators. Our annual Professional Conference provides professional development opportunities to member and nonmember educators. Our annual Summer Student Research Conference draws participants from Consortium schools across the country, where students meet to share their research projects. Administrators gather every summer to share ideas with colleagues from across the U.S. at our annual Administrators Summit.

Consortium publications include a monthly newsletter and the STEM Edge magazine released quarterly. The true value of NCSSS is the incredible depth of teaching and educational leadership experience held among the member schools and affiliate organizations.

For more than a quarter century, Consortium members have worked with dedication and passion to provide resources to STEM educators and students. We invite STEM-focused schools, organizations, foundations, corporations, international organizations, and individuals to apply for Consortium membership. Membership criteria and our membership application may be found at www.ncsss.org.

This Membership Profile includes an overview of the Consortium. The diversity of structures within the Consortium is one of our greatest strengths. There is no one way to provide a world-class STEM education – programs offered must be developed to meet the needs of the community and stakeholders. Still, there are trends worth noting from the most recent member survey conducted two years previously.
Consortium Schools Deliver STEM to Students in a Variety of School Program Structures

Student Population and School Size

Consortium schools range in size as the largest serves a population of over 3,000 students and the smallest has just over 100 students. Approximately three-quarters of Consortium schools have 50% or greater female enrollment. Almost a third of Consortium schools have 25% or more students on free and reduced lunch.

Consortium Students are High-Performing in SAT and ACT

- Average student SAT Math score is 663.4 – US average is 514
- Average student SAT Verbal score is 639 – US average is 496
- Average student ACT score is 29 – US average is 21
Admission Rigor at Consortium Schools

Admission requirements for Consortium schools are highly selective. About half of Consortium schools admit less than 50% of their applicants; one-third of schools admit 25% or less of their applicants.

A majority of schools use a combination of middle school grades, teacher recommendations, entrance exams, and student essays to determine admission.

Scholarship Opportunities at Consortium Schools

Creating a challenging and creative learning venue, Consortium schools attract the highest performing and motivated students with significant scholarship awards. Member schools offer both merit- and needs-based packages. Awards range in amount from school to school. Most schools grant full and partial awards. The majority of awards are merit-based, attesting to the high ability of students.

Consortium Students Post-Secondary Path

Virtually all students move on to a four-year college career at their school of choice. Nearly 100% of Consortium schools send their students to four types of colleges/universities – Ivy League, highly competitive national universities/colleges, public universities, and private universities. 93% of Consortium members graduate students that attend Ivy League schools and 96% have graduates that attend highly competitive national colleges/universities.
ALABAMA
Alabama School of Fine Arts-Russell Math & Science Center
Alabama School of Math and Science

ARKANSAS
Arkansas School for Mathematics, Sciences and the Arts

DELAWARE
The Charter School of Wilmington

FLORIDA
Florida Atlantic University High School

GEORGIA
The Center for Advanced Studies in Science, Math, and Technology at Wheeler High School
Gwinnett School of Mathematics, Science, and Technology
Rockdale Magnet School for Science and Technology

ILLINOIS
Illinois Mathematics and Science Academy
Wheeling High School

KANSAS
Kansas Academy of Mathematics and Science

KENTUCKY
Craft Academy at Morehead University
Gatton Academy of Mathematics and Science in Kentucky

LOUISIANA
Benjamin Franklin High School
Louisiana School for Math, Science, & the Arts
Patrick F. Taylor Science and Technology Academy

MAINE
Maine School of Science and Mathematics

MARYLAND
Anne Arundel County Public Schools - South River High School
Baltimore Polytechnic Institute
Eleanor Roosevelt Science and Technology Center
The Ingenuity Project
Baltimore Polytechnic Institute
Hamilton Elementary/Middle School
Mount Royal Elementary/Middle School
Roland Park Elementary/Middle School
Montgomery Blair High School Science, Mathematics & Computer Science Magnet Program
Oxon Hill Science & Technology Center
Poolesville High School – A Whole School Magnet
Science and Mathematics Academy at Aberdeen High School

MASSACHUSETTS
King Philip Regional High School
Massachusetts Academy of Mathematics & Science at Worcester Polytechnic Institute
Nipmuc Regional High School
Uxbridge High School

MICHIGAN
Battle Creek Area Mathematics & Science Center
Berrien County Math & Science Center
Kalamazoo Area Mathematics & Science Center
Lakeshore High School Math/Science Center

MISSISSIPPI
Mississippi School for Mathematics & Science

MISSOURI
Rockhurst High School
St. Teresa's Academy

NEW JERSEY
Academy of Allied Health & Science- Monmouth County Vocational School
Bergen County Academies
Biotechnology High School
High Technology High School
Marine Academy of Science & Technology
Marine Academy of Technology and Environmental Science (OCVTS)
Math and Science Magnet Program at Morris Hills
The Academy for Mathematics, Science and Engineering

NEW YORK
The Bronx High School of Science
Brooklyn Technical High School
High School for Math, Science and Engineering at The City College
Hunter College High School
Millennium Brooklyn High School
Stuyvesant High School

NORTH CAROLINA
North Carolina School of Science & Mathematics

OHIO
Hathaway Brown School

OKLAHOMA
Oklahoma School of Science and Mathematics at Ardmore Regional Center

PENNSYLVANIA
Downington STEM Academy

SOUTH CAROLINA
Dutch Fork High School
South Carolina Governor's School for Science & Mathematics
Spring Valley High School

TEXAS
Academy for Careers in Engineering and Science
Academy for Science & Health Professions Conroe ISD
Academy of Science & Technology Conroe ISD
John Jay Science & Engineering Academy
Liberal Arts and Science Academy of Austin at LBJ HS (LASA)
School of Science and Engineering
Texas Academy of Math and Science

UTAH
SUCCESS Academy at Dixie State University - DSU
SUCCESS Academy at Southern Utah University - SUU

VERMONT
Essex High School

VIRGINIA
Academies of Loudoun
Central Virginia Governor's School for Science and Technology
Chesapeake Bay Governor's School for Marine & Environmental Science
Governor's School @ Innovation Park
New Horizons Governor's School for Science and Technology
Shenandoah Valley Governor's School
Southwest VA Governor's School for Science, Mathematics & Technology
The Mathematics & Science High School at Clover Hill
Thomas Jefferson High School for Science and Technology

WASHINGTON
Camas Academy of Math and Science
Alabama School of Fine Arts-Russell Math & Science Center
Birmingham, AL 35203
205.252.9241

Head of school: Dr. Michael Meeks  Executive Director  mmeeks@asfa.k12.al.us
Primary contact: Hungsin Chin  hchin@asfa.k12.al.us
Website address: www.asfa.k12.al.us
Total students enrolled: 100 (19 seniors)
School structure: Comprehensive full-day (students take STEM and non-STEM courses)
Part residential and commuters
School within a school (program open to local school district and/or to a magnet population)
5-year program (grades 8-12)

PROGRAMS OFFERED

Unique Offerings: The Alabama School of Fine Arts (ASFA) offers instructions in six specialty areas: Creative Writing, Dance, Math & Science, Music, Theatre, and Visual Arts. Students of the Math and Science specialty program of the Russell Math & Science Center at ASFA follow a diverse and enriched curriculum that promotes creative and critical thinking with an appreciation for the arts. As members of the artistic community, students have opportunities to attend various performances offered by the five fine arts programs throughout the year. As part of the graduation requirements, students in this specialty program take three arts electives offered by the five fine arts specialty programs. In addition, students are required to complete a senior research project which includes a poster session and an oral presentation/defense at the Senior Research Symposium. To complete this research experience, students are also required to submit a five chapter research thesis of their projects. Senior students, involved in individual in-depth research projects, are mentored each year by scientists and experts in the respective fields. These collaborations are offered by in-state and out-of-state industry organizations and educational institutions like University of Alabama, University of Alabama at Birmingham, Birmingham Southern College and Georgia Institute of Technology.


Science Courses/Electives: Biology, Chemistry, Physics, Environmental Science, Organic Chemistry, Space Science, Earth Science, Marine Biology

Technology Courses/Electives: Introduction to Engineering

Research Courses/Electives: Research I & II

Computer Science Courses/Electives: AP Computer Science Principles, C/Linux Programming, C++/Linux, AP Computer Science A, Make-It with Computing, Advanced Topics in Computer Science

Dual Enrollment: Yes – at the college/university, taught by college/university staff


Scholarship Awards: $4,117,596

Alabama School of Math and Science
1255 Dauphin St.
Mobile, AL 36604
admissions@asms.net
251.441.2100

Head of school: Monica Motley, Ph.D.  mmotley@asms.net
Primary contact: John Hoyle  jhoyle@asms.net  251.441.2128
Website address: www.asms.net
Total students enrolled: 240
School structure: Residential (students live on campus)
3-year program (grades 10-12)
Unique Offerings: Alabama School of Math and Science (ASMS) students are given the opportunity to earn college credit accepted by many institutions, including the University of South Alabama, the University of Alabama, and the University of Alabama at Birmingham, among others. ASMS faculty also design and offer classes based on student interests, which include Directed Reading and Directed Research courses. Directed Reading courses involve intensive investigation of a topic or subject, taken under the direction of a faculty member who mentors the student's research. Here are a few Directed Reading and Research courses that have been offered in recent history: Crystallography, Ornithology, Pyrotechnics, Problem Solving, Boolean Algebra, Topology, and Mathematical Origami. ASMS is the only high school in Alabama with active cultural study abroad programs in Münster, Germany, and in Seville, Spain. Both programs offer a direct immersion exchange with the prestigious Gymnasium Paulinum in Münster and the Europa International School in Seville.


Science Courses/Electives: AP Biology, AP Chemistry, Physics, AP, Environmental Science, AP Physics B and C, Honors Physics, Aerodynamics, Astronomy, Organic Chemistry, Biochemistry, Zoology, Genetics, and Anatomy & Physiology

Technology/Computer Science Courses/Electives: AP Computer Science, C#, Computer Science Principles, Introduction to Programming with Alice, Java, Mechatronics, Mechanical Engineering, and Virtual Reality Modeling Language

Dual Enrollment: Yes – At school, taught by school staff and college/university staff

Participation in National Academic Competitions: Siemens Competition in Math, Science, and Technology, Intel Science Search, American Mathematics Association Competition, Biology Olympiad, Chemistry Olympiad, Physics Olympiad, Computational Linguistics Olympiad, First Robotics, or other robotics competitions

Scholarship Awards: $7.7 million

ARKANSAS

Arkansas School for Mathematics, Sciences and the Arts
200 Whittington Ave.
Hot Springs, AR 71901
501.622.5100

Head of school: Corey T. Alderdice  Director alderdiece@asmsa.org  501.622.5115
Website address: www.asmsa.org
Total students enrolled: 230
School structure: Comprehensive full-day (students take STEM and non-STEM courses)
Residential (students live on campus)
2-year program (grades 11-12)

Unique Offerings: ASMSA enjoys opportunities to collaborate with fellow campuses of the University of Arkansas. In particular, our “Concurrent Core” curriculum allows students to earn at least forty hours of college credit during their two-year program of study at ASMSA. UoFÁ campuses also assist in research programs and outreach experiences. The Fundamentals in Research Methods (FIRM) sequence is a four semester program that guides students through the process of research and knowledge development. FIRM is designed to teach students about the research process and to apply that process to their own project. All experimental projects are chosen from one of the following categories: behavioral and social sciences, biochemistry, botany, chemistry, computer science, earth and space sciences, engineering, environmental science, mathematics, medicine and health, microbiology, physics and zoology. During their senior year, students continue to develop their research methods and applications. Students ready themselves for the presentation of their projects including mock presentations and critiques from their advisors. Our innovative and challenging curriculum will give students the opportunity to discover their intellectual and individual passions. Our world class faculty will guide learners through the fascinating world of science, applied technology and research. Students are also able to take captivating elective courses such as Robotics, Quantum Mechanics, Astrophysics, Immunology, Artificial Intelligence, Graphic Design and Documentary Films. All of our courses promote creative thinking and problem solving.

Math Courses/Electives: Algebra II, Trigonometry, Pre-Calculus, Calculus, Options include a concurrent credit equivalent of Calculus AB or Business Calculus, Statistics (AP or other), Multivariable Calculus, Linear Algebra, Differential Equations, Discrete

**Science Courses/Electives:** Biology, Chemistry, Physics, Earth Science, Environmental Science, American Folk Music and Acoustics, Astronomy, Astrophysics, Earth Systems Science, Global Change, Oceanography, Organic Chemistry, Biochemistry, Analytical Chemistry, Anatomy and Physiology, Zoology, Neurobiology, Basic Genetics, Developmental Biology, Botany, Immunology, Optics, Thermodynamics

**Technology Courses/Electives:** Intro to Engineering Design, Circuits, Intro to Artificial Intelligence and Robotics, Modern Materials Manufacturing, Introduction to Computer Networking, Oracle Database

**Research Courses/Electives:** Design and Analysis (DnA) Junior Fundamentals in Research Methods Senior Fundamentals in Research Methods

**Computer Science Courses/Electives:** One course in Computer Programming (Java, Python, or C++), Java, C++, Python, Oracle

**Dual Enrollment:** Yes – At school, taught by school staff

**Participation in National Academic Competitions:** Siemens Competition in Math, Science, and Technology, Intel Science Search, Computational Linguistics Olympiad, First Robotics, or other robotics competitions

**Scholarship Awards:** $10,000,000

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**DELAWARE**

**The Charter School of Wilmington**

100 N. DuPont Road
Wilmington, DE 19807

Website address: [www.charterschool.org](http://www.charterschool.org)

**FLORIDA**

**Florida Atlantic University High School**

777 Glades Road
Boca Raton, FL 33431

Website address: [www.fauhigh.fau.edu](http://www.fauhigh.fau.edu)
The Center for Advanced Studies in Science, Math, and Technology at Wheeler High School

375 Holt Road
Marietta, GA 30068

Head of school: Christian Barnes   Interim Magnet Coordinator  christian.barnes@cobbk12.org
Primary contact: Stacy Regitsky   Magnet Program Advisor    stacy.regitsky@cobbk12.org
770.578.3286
Website address: www.wheelermagnet.com
Total students enrolled: 526
School structure: Comprehensive full-day (students take STEM and non-STEM courses)
School within a school (program open to local school district and/or to a magnet population)
4-year program (grades 9-12)

STEM & STEAM Certified by the state of Georgia

PROGRAMS OFFERED

Unique Offerings: All students must complete a STEM or STEAM Track. We have an advanced program of courses that require AP courses as prerequisites. These courses are: Advanced DNA/Genetics, Chemical Engineering, Advanced Physics/Robotics, Aerospace Engineering, Advanced Scientific Research, Advanced Scientific Internship, Georgia Tech Linear Algebra (Distance course), Georgia Tech Multivariable Calculus (Distance course), Georgia Tech Genetics (Distance course) Georgia Tech Organic Chemistry (Distance Course)


Science Courses/Electives: Biology, AP Biology, Chemistry, AP Chemistry, Physics, AP Physics C: Mechanics, AP Physics C: E&M, AP Physics I, AP Physics II, AP Environmental Science


Research Courses/Electives: Research III, Advanced Scientific Research

Computer Science Courses/Electives: AP Computer Science Principles, AP Computer Science (Java), MatLab

Dual Enrollment: Yes – At the college/university, taught by college/university staff
Distance Learning: Yes

Participation in National Academic Competitions: Siemens Competition in Math, Science, and Technology, Intel Science Search, American Mathematics Association Competition, Biology Olympiad, Chemistry Olympiad, Physics Olympiad, First Robotics, or other robotics competitions

Gwinnett School of Mathematics, Science, and Technology

970 McElvaney Ln NW
Lawrenceville, GA 30044

Head of school: IV Bray   Principal   IV_Bray@Gwinnett.k12.ga.us  678.518.6700
Website address: www.gsmst.org
Total students enrolled: 1,100
School structure: Comprehensive full-day (students take STEM and non-STEM courses)

PROGRAMS OFFERED

Unique Offerings: The Gwinnett School of Mathematics, Science, and Technology Partnership Program

9th Grade [Speaker Series] - The purpose of the Speaker Series is to expose our 9th grade students to the vast array of careers within the STEM fields. Four times per year speakers from partnering organizations (industry, university, corporate, government, etc.) are invited to the school to spend time with a small group of students who have expressed prior interest in the speaker’s
INSTITUTIONAL MEMBERS

particular area of expertise. 10th Grade [STEM Site Visits & Job Readiness Workshops] - Phase two of the Partnership Program involves our 10th grade students participating in on-site job shadow events. Students travel to a business/corporate/university partner locations and experience the daily routine of an assigned employee for two to four hours. The job shadow events introduce students to business etiquette, protocols, and requirements common to an industry. This phase also gives students an idea of which internship they would like to pursue the following year. 11th Grade [Junior Fellowship Experience] - During their 11th grade year, our students participate in JFE. This program partners university and industry experts with our students to complete in-depth work assignments and projects. These internships are a graduation requirement for GSMST students and adhere to strict requirements regarding rigor, time commitment, and use of STEM skills. Students can choose to participate in an experience from one of five options including internship, research, service learning, leadership, or specialized dual enrollment programs (e.g. Cyber Security). The time-frames are either summer, short-term (one semester), or long-term (yearlong). 12th Grade [Senior Capstone Experience] - Upon completion of the JFE, our students complete SCE. These Senior Capstone projects involve extensive research and industry experience normally reserved for graduate students. At the conclusion of the SCE students present their senior portfolio to a panel of judges and underclassmen. Students are able to choose from multiple options for their SCE, including internships and independent projects. All SCE projects are yearlong.

Science Courses/Electives: Chemistry, Physics, AP Biology, AP Chemistry, AP Physics, AP Environmental Science, Analytical Forensic Investigation
Technology Courses/Electives: Foundations/Concepts/Applications of Engineering, Nanotechnology, Robotics, 3-D Modeling, AVTF
Research Courses/Electives: GSMST Science and Engineering Fair Project / Research Course; JFE, SCE; AP Seminar Computer Science Courses/Electives: AP CS Principles, AP CS Programming, Linear Algebra & Python
Dual Enrollment: Yes
Online Courses: Yes
Distance Courses: Yes
Participation in National Academic Competitions: VEX & First Robotics; National Examinations for Biology, Chemistry, Physics; WorldQuest

Rockdale Magnet School for Science and Technology
930 Rowland Road
Conyers, GA 30012
Head of school: Amanda Baskett  Director
abaskett@rockdale.k12.ga.us  770.483.8737
Website address: www.rockdalemagnetschool.com
Total students enrolled: 330
School structure: School within a school (program open to local school district and/or to a magnet population)
4-year program (grades 9-12)

PROGRAMS OFFERED

Unique Offerings: Rockdale Magnet School for Science and Technology (RMSST) was established in the fall of 2000 as a partnership between Rockdale County Public Schools in Conyers, Georgia and the College of Engineering at the Georgia Institute of Technology in Atlanta, Georgia. Our mission is to foster and produce students who think ethically, critically, and independently while excelling in competitive academic environments and demonstrating high standards and expectations distinguished by rigorous, accelerated curriculum, four years of student-driven scientific research, personalized academic support and advisement, academic extracurricular activities, leadership and service opportunities, and dedicated family and community involvement. RMSST Research Curriculum - Students are involved in individual, in-depth research projects each year in student-selected areas of Math, Science, Engineering, or Technology. These investigations are carried out under the supervision of RMSST faculty and mentors from various universities, businesses, and government agencies. RMSST students present an oral defense of their research projects to school and community members at the Annual Student Showcase and compete in regional, state, national and international science fairs.
RMSST Scientific Internship Program - Provides senior students with real-world experiences in their area of interests, real-world applications that are directly linked to the Magnet curriculum, research experience in an on-site lab or work-related project, skills related to a specific occupation, and exposure to equipment and procedures involved in a specific occupation.


Research Courses/Electives: Research I, II, III, IV

Computer Science Courses/Electives: AP Computer Science Principles, AP Computer Science

Dual Enrollment: Yes, Move on When Ready


Scholarship Awards: $10,302,867

ILLINOIS

Illinois Mathematics and Science Academy
1500 Sullivan Road
Aurora, IL 60506-1000

Head of school: Dr. José M. Torres President jtorres@imsa.edu
630.907.5000

Primary contact: Dr. Robert Hernandez Principal 630.907.5069

Website address: www.imsa.edu

Total students enrolled: 652

School structure: Residential (students live on campus)
3-year program (grades 10-12)

PROGRAMS OFFERED

Unique Offerings: Student Inquiry and Research (SIR) is a program that teaches IMSA student how to carry out authentic research. SIR is a program intended to instruct students in the methods and methodology of doing research. Regardless of the discipline in which students learn these skills, they will be invaluable in developing the ability to extrapolate from the things that are known to the things that are not using a combination of logic and experimentation. The IMSA Internship program connects students with on-campus or off-campus with professional business, technology and/or entrepreneurial mentors. The goal of the IMSA Internship program is to provide opportunities for students to carry out industry, business or product focused projects of inquiry/investigation under the guidance of the professional mentor.


Participation in National Academic Competitions: Siemens Competition in Math, Science, and Technology, Intel Science Search, American Mathematics Association Competition, First Robotics, or other robotics competitions
**Wheeling High School**

900 S. Elmhurst Road  
Wheeling, IL 90090  

Head of school: Jerry Cook  Principal  Jerry.Cook@d214.org  847.718.7010  

Primary contact: Thomas Steinbach  thomas.steinbach@d214.org  

Website address: www.d214.org  

School structure: Comprehensive high school with a STEM focus

**PROGRAMS OFFERED**


**Unique Offerings:** Wheeling High School offers a comprehensive education based on student inquiry and practical experience. All curricular disciplines are incorporated including the arts, languages, and humanities alongside a focus on career certifications, college partnerships, and technology to prepare students for post secondary opportunities.

**Math Courses/Electives:** Algebra 50, 60, 70, Honors Advanced Algebra, Geometry 60s and 70s, Honors Geometry, Algebra 2, Advanced Algebra, Honors Pre-Calculus, Accelerated Honors Pre-Calculus, AP Calculus, AP statistics, Calculus 3

**Science Courses/Electives:** Biology, Honors Biology, AP Biology, Chemistry, Honors Chemistry, AP Chemistry, Physics, Honors Physics, AP Physics1, AP Physics C, AP Environmental Science, Zoology, Oceanography, Human Physiology, Introduction to Nano science

**Technology Courses/Electives:** Design and Modeling, Magic of Electrons, Automation and Robotics

**Computer Science Courses/Electives:** Computer Repair A+ Certification, Computer Science and Software Engineering- PLTW, Computer Programming I, AP Computer Science, Web Site Programming

**Programs of Study/Pathways:** International Business, Information Technology, Engineering / Architecture, Industrial / Manufacturing, Health Sciences, Communications, Environmental / Agricultural, Human Sciences and Resources

**Dual Enrollment:** At the college level and offered within and outside of the building

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**Kansas**

**Kansas Academy of Science and Mathematics**

Fort Hays State University  
600 Park St.  
Hays, KS 67601  

Head of school: Dr. Roger W. Schieferecke  Executive Director of Early College Programs  
wschieferecke@fhsu.edu  785.628.5973  

Primary contact: kams@fhsu.edu  785.628.4690  

Website address: www.fhsu.edu/kams  

Total students enrolled: 90  

School structure: Comprehensive full-day (students take STEM and non-STEM courses)  
Residential (students live on campus)  
Located on a University campus  
School within a school (program open to public schools)  
2-year program (grades 11-12)

**PROGRAMS OFFERED**

**Unique Offerings:** Our students are required to participate in undergraduate research with a university faculty member serving as a mentor. Students are also required to present their research in a public fashion. Our students compete in various competitions including mathematics, programming, physics, engineering, writing, research, etc.

**Math Courses/Electives:** All college-level pre-calculus, Calculus I and Calculus II, differential equations, multivariate calculus, linear algebra, & statistic

**Science Courses/Electives:** All college-level biology, chemistry, calculus-based physics, geosciences

**Technology Courses/Electives:** College-level Computer Programming I & II, Java, Data and File Structure, Desktop Publishing
Craft Academy at Morehead University
150 University Blvd.
Grote-Thompson Hall
Morehead KY 40351
606.783.2093  |  Fax: 606.783.9195

Contact: Dr. C. Christian  c.christian@moreheadstate.edu
Website address: www.moreheadstate.edu/craft-academy
Total students enrolled: 120

The Craft Academy for Excellence in Science and Mathematics at Morehead State University is a prestigious dual credit residential high school opportunity for (120) gifted youth from across the Commonwealth of Kentucky. The Craft Academy is home to a diverse population of 120 students (60 males, 60 females) that range in age from 15-18. Students considered for selection must have a minimum ACT score of: 22 in Math, 18 in English and 21 in reading. Selected students complete their junior and senior years of high school on the campus of Morehead State University while simultaneously receiving 15-18 college credit hours per term.

Advanced curricular offerings including AP/IB dual credit enrollment opportunities:
• Craft Academy students are afforded dual credit college courses. AP credit is accepted that can advance students into higher level college courses.
• Craft Academy has a unique curricular emphasis, along with STEM, that includes a +X focus. The three components of STEM+X include: Entrepreneurship and Innovation; Creativity and Design and Civic and Regional Engagement. Students will learn to take their STEM knowledge to a higher level of application through the +X components that allows students to “Imagine, Invent and Impact” their fields of study through in depth research. Students also have the opportunity to create prototypes that can lead to inventions in their work with professors and in their ability to access our Maker Space area located in the residence hall.
• In addition, a study abroad experience is provided at the end of the junior year. Travelers have explored renewable energy in Germany and Switzerland, business and Industry in Ireland, foreign language immersion in China and the third class will travel to Italy.

Project research requirements/offering:
During the Craft Academy experience, students are encourage to be involved in research with university professors. The academy, in its second year and first graduating class in May, 2017 has involved many students in ground breaking research. Examples include: archeological research of ancient Mayan Ruins in Mexico using drone technologies, the new frontier of exomedicine by placing biological experiments on the International Space Station and integrating sensor technology into modified clothing for people in wheel chairs, research in isolating and understanding a variety of bacteria phage.

Our first year of Craft Academy graduates have received acceptance offers from: MIT, Georgetown University in D.C., Tulane, Cornell, University of Cincinnati, University of Louisville, University of Kentucky, Vanderbilt, Boston College, Western Kentucky University, Eastern Kentucky University, Morehead State University, Tennessee, and University of Alabama Huntsville. Interviews are completed or pending with: Harvard, Stanford and Yale. Applications pending include: Penn State, and Northwestern.
To date, our student scholarship amount is $3-3.5 million.
INSTITUTIONAL MEMBERS

Gatton Academy of Mathematics and Science in Kentucky
1906 College Heights Blvd. #71031
Bowling Green, KY 42101
270.745.6565

Head of school: Lynette Breedlove  Director
Website address: www.wku.edu/academy
Total students enrolled: 126
School structure: Comprehensive full-day (students take STEM and non-STEM courses)
Residential (students live on campus), Located on a University campus
2-year program (grades 11-12)

PROGRAMS OFFERED

Unique Offerings: Study abroad - England, Europe, China, Costa Rica during winter and summer terms, Strong opportunities in research with WKU professors, Various research conferences in state and nationally Summer research/internship grants
Math Courses/Electives: Trigonometry, Calculus, Students must complete minimally through Calc II, Trigonometry Statistics (AP or other), Multivariable Calculus, Linear Algebra, Differential Equations, Discrete Math, The full course selection through WKU
Science Courses/Electives: Biology, Chemistry, Physics, Environmental Science
Technology Courses/Electives: Electrical, Mechanical, and Civil Engineering courses through WKU
Research Courses/Electives: Our students may choose to do research projects with any professor on campus. Some departments require a lab tech certification
Computer Science Courses/Electives: Computer Science I (Java-based) and Computational Problem-Solving (Mathematica-based), additional courses in CS available through the university
Dual Enrollment: Yes – At the college/university, taught by college/university staff
Scholarship Awards: $4 million

LOUISIANA

Benjamin Franklin High School
2001 Leon C. Simon Blvd.
New Orleans, LA  70122
(504) 286-2600

Head of school: Dr. Patrick Widhalm  pwidhalm@bfhsla.org
Primary contact: David Ferris   dferris@bfhsla.org
Website address: www.bfhsla.org
Total students enrolled: 970  Grades 9-12

PROGRAMS OFFERED

Unique Offerings: All students complete an Individual Research Project. Students may intern with faculty at the University of New Orleans, Tulane University, and the Louisiana State University Medical Center. Additionally, Franklin is proud to partner with the New Orleans Center for Creative Arts (NOCCA), giving qualified students the opportunity for off-campus preprofessional arts training with intensive instruction in dance, media arts, music, theater arts, culinary arts, visual arts and creative writing.
Math Courses/Electives: Algebra I/II, Geometry, Pre-Calculus, Calculus (AP), Statistics
Science Courses/Electives: Physics (I,II, AP), Biology (I, II, AP), Chemistry (I,II,AP), Earth Science, AP Environmental Science
Technology Courses/Electives: Computer Science (I, AP), Media Arts (I, II), Digital Media
Dual Enrollment: Yes, with the University of New Orleans
Scholarship Awards: $: $36,000,000 in Merit Based College Scholarships Awarded in 2017
INSTITUTIONAL MEMBERS

Benjamin Franklin High School, New Orleans’ most outstanding public charter school, has been preparing students for success through academic achievement since it was founded in 1957. Consistently ranked as a “top public high school in the nation” by U.S. News and World Report, Newsweek and Businessweek, Franklin has received the highest School Performance Score in Louisiana, making it the #1 public school in the state, year after year. Franklin is repeatedly named a National Blue Ribbon School, producing Presidential and National Merit Scholars each year. The exceptional students, faculty and staff of Benjamin Franklin High School are the best and the brightest of New Orleans.

Louisiana School for Math, Science, and the Arts
715 University Parkway
Natchitoches, LA 71457

Head of school: Steven G. Horton, PhD  Director
shorton@lsmsa.edu  318.357.2500
Website address: www.lsmsa.edu
Total students enrolled: 360
School structure: Residential (students live on campus)
3-year program (grades 10-12)

PROGRAMS OFFERED

Unique Offerings: Special Projects Week, Work Service Program, Future Scientists Program, Classical Scholars Program, Caroline Dorman Environmental Program, Artists-in-Training Program, full Arts and Humanities curriculum integrated alongside Math and Science offerings, various research and internship opportunities across the state, and the opportunity to earn an Associate’s Degree alongside the LSMSA high school diploma.


Science Courses/Electives: 3-D Visualization; Accelerated Physics III and lab; Analytical Chemistry and lab; Animal Behavior; Biochemistry I and II; Botany and lab; Ecology and lab; Embryology; Genetics and lab; Microbiology and lab; Organic Chemistry and lab; Quantum Mechanics; Thermodynamics

Technology Courses/Electives: Robotics, Computational Science, 3-D Design

Computer Science Courses/Electives: Java, C++, Python, Data Structures, Game Design, Programming in JAVA, Mobile App Development

Dual Enrollment: Yes – At school, taught by school staff

Participation in National Academic Competitions: Siemens Competition in Math, Science, and Technology, Intel Science Search, American Mathematics Association Competition, Biology Olympiad, Chemistry Olympiad, Physics Olympiad

Scholarship Awards: $21.4 M offered to 104 graduates, plus 100% qualifying for state’s scholarship program for in-state universities

Patrick Taylor Science and Technology Academy
701 Churchill Parkway
Avondale, LA 70094

Head of school: Jaime Zapico  Principal  jaime.zapico@jppss.k12.la.us
Primary contact: Jasmine Hernandez  jasmine.hernandez@jppss.k12.la.us  504.838.2249
Website address: www.pftsta.com
Total students enrolled: 350
School structure: Comprehensive full-day (students take STEM and non-STEM courses)

PROGRAMS OFFERED

Unique Offerings: One to one laptops, senior project

Math Courses/Electives: Algebra I, Geometry, Algebra II, Pre-Calculus, Statistics (AP or other)
INSTITUTIONAL MEMBERS

Science Courses/Electives: Biology, Chemistry, Physics, Earth Science

Dual Enrollment:
Yes – At the college/university, taught by college/university staff

Scholarship Awards: $2.5 million

MAINE

Maine School of Science and Mathematics

95 High St.
Limestone, ME 04750
mssm@mssm.org 207.325.3303

Head of school: David Pearson Executive Director pearsond@mssm.org 207.325.3605
Website address: www.mssm.org
Total students enrolled: 140
School structure: Comprehensive full-day (students take STEM and non-STEM courses) Residential (students live on campus) 2-year program (grades 11-12), 3-year program (grades 10-12), 4-year program (grades 9-12)

PROGRAMS OFFERED

Unique Offerings: January Term (Short two week intensive term), Internships, Student Research, Partnering with Higher Education Institutes for Dual Credit, STEM Talks, etc.


Science Courses/Electives: Physical Science, Biological Processes and Research, Plant Biology, Chemistry, Physics, Applied Genetics & Biotechnology, Astronomy, Anatomy and Physiology, Field and Spacetime, Waves and Oscillations

Technology Courses/Electives: Creative Robotics, 3D Rendering & Animation, Topics in Software Engineering and Robotics, Web Development, App Development, Game Development

Research Courses/Electives: Topics in Software Engineering and Robotics, Creative Robotics, J-Term courses such as Ecological Research or Genetics

Computer Science Courses/Electives: Introduction to Programming and Algorithms, Data Structures and Algorithms

Dual Enrollment: Yes – At school, taught by school staff

Participation in National Academic Competitions: Mathematical Association of America Competition, American Regions Mathematics League, VEXRobotics, Science Bowl, Sea Perch Challenge, Physics Olympiad, Science Fair

MARYLAND

Anne Arundel County Public Schools
- South River High School

201 Central Avenue East
Edgewater, MD 21037

Head of school: William T. Myers wtmyers@aacps.org 410.956.5600
Website address: www.southriverhigh.org

Science Courses/Electives: Biology, Chemistry, Physics, Earth Science

Dual Enrollment:
Yes – At the college/university, taught by college/university staff

Scholarship Awards: $2.5 million
Baltimore Polytechnic Institute
1400 W. Cold Spring Ln.
Baltimore, MD 21209

Head of school: Jacqueline Williams  jwilliams03@bcps.k12.md.us
Primary contact: Willia Holley  wholley@bcps.k12.md.us  410.396.7026
Website address: www.bpi.edu
Total students enrolled: 1,587
School structure: Comprehensive full-day (students take STEM and non-STEM courses)

PROGRAMS OFFERED
Unique Offerings: Johns Hopkins Research Program  Northup Grummann Internships  Lockheed Martin Mentorship Program
Robotics  It's Academic Annual STEM Competition
Math Courses/Electives: Algebra I, Geometry, Algebra II, Trigonometry, Pre-Calculus, Calculus, Advanced Mathematics, Trigonometry, Statistics (AP or other)
Science Courses/Electives: Biology, Chemistry, Physics, Earth Science, Environmental Science, AP Psychology, Forensics
Technology Courses/Electives: Foundations of Technology, Impacts of Technology, Applications of Technology, Engineering Practicum, Matter and Energy, Electricity
Research Courses/Electives: Senior Research Practicum  Science Research Practicum  Science Research  Science Technology and Society  Engineering Practicum
Computer Science Courses/Electives: Java, C++
Participation in National Academic Competitions: Siemens Competition in Math, Science, and Technology, Intel Science Search American Mathematics Association Competition, First Robotics, or other robotics competitions
Scholarship Awards: $27 million

Eleanor Roosevelt Science and Technology Center
7601 Hanover Parkway
Greenbelt, MD 20770

Head of school: Reginald McNeill  Principal  mcneill@pgcps.org
Primary contact: Jane Hemelt  Coordinator  jhemelt@pgcps.org  301.513.5400 ext 82394
Website address: www1.pgcps.org/eleanorroosevelt
Total students enrolled: 965

PROGRAMS OFFERED
Unique Offerings: Internship Program
Math Courses/Electives: Advanced Algebra 1, Geometry S/T, Algebra 2 Honors. Algebra 2 Trig, Trig Analysis Honors, Pre-Calculus Honors, AP Calculus AB, AP Calculus BC, AP Statistics, Calculus 3 and Differential Equations. The Calculus 3/Differential Course is offered through The Catholic University of America; students earn 4 college credits for each course.
Science Courses/Electives: Biology S/T, Chemistry S/T, Physics S/T, Genetics, Microbiology, Anatomy/Physiology, Forensics Science 1 and 2, A.P. Environmental Science, AP Chemistry, AP Physics C.
Research Courses/Electives: Research Practicum (Grade 12)
Computer Science Courses/Electives: Intro Computer Science, AP Computer Science
Participation in National Academic Competitions: Siemens Competition in Math, Science, and Technology, Intel Science Search, ISEF International Science Fair, First Robotics
Scholarship Awards: $24 million (Class of 2016)
The Ingenuity Project
1400 W. Cold Spring Ln.
Baltimore, MD 21209
410.662.8665

Executive Director:  Lisette Morris  Executive Director  lmorris@ingenuityproject.org
Primary contact: Dr. Sergei Zverev  Associate Director  szverev@ingenuityproject.org
Website address:  www.ingenuityproject.org
Total students enrolled:  560
School structure:  Comprehensive full-day (students take STEM and non-STEM courses)
       School within a school (program open to local school district and/or to a magnet population)
       7-year program (grades 9-12)

PROGRAMS OFFERED
Unique Offerings:  Intel Science Talent Search, Intel International Science and Engineering Fair, Siemens Competition, Baltimore Science Fair, Maryland Math League, American Mathematics Competition (AMC) and American Invitational Mathematics Exam (AIME), University of Maryland Mathematics Competition, Jr. Sciences and Humanities Symposium. Ingenuity students complete their independent research projects at leading research institution in Maryland such as Johns Hopkins School of Medicine, Space Telescope Science Institute, Johns Hopkins Departments of Molecular Biology and Genetics, Chemical and Biomolecular Engineering, Neurology, Physics and Astronomy, Mathematics, Mechanical Engineering; The Carnegie Institution, Kennedy Krieger Institute, etc.
Math Courses/Electives:  Geometry, Algebra II, Trigonometry, AP Calculus AB, AP Calculus BC, Probability and Statistics, Statistics (AP or other)
Science Courses/Electives:  Biology, Chemistry, Physics, AP Chemistry and AP Physics B
Technology Courses/Electives:  Fundamentals of Technology
Research Courses/Electives:  Science, Technology and Society, Ingenuity 3-credit Research Practicum
Dual Enrollment:  Yes – At the college/university, taught by college/university staff
Participation in National Academic Competitions:  Siemens Competition in Math, Science, and Technology, Intel Science Search, Biology Olympiad
Scholarship Awards:  $3,000,000

Montgomery Blair High School Science, Mathematics & Computer Science Magnet Program
51 University Blvd, East
Silver Spring, MD 20901

Head of school:  Renay Johnson  Principal  renay_c_johnson@mcpsmd.org
Primary contact: Peter Ostrander  peter_m_ostrander@mcpsmd.org  301.649.8240
Website address:  www.mbhs.edu
Total students enrolled:  410
School structure:  Comprehensive full-day (students take STEM and non-STEM courses)
       School within a school (program open to local school district and/or to a magnet population)
       4-year program (grades 9-12)

PROGRAMS OFFERED
Unique Offerings:  10th grade environmental science trip to Wallops Island, VA, Senior Research Project Program with outside mentor, 50 Intel Science Talent Search semifinalists or finalists from 2008-2013, 49 Siemens Competition regional semifinalists or finalists from 2007-2012, Compete in American Mathematics Competition, American Regions Mathematics League, American Computer Science League, USA Computing Olympiad, Science Olympiads (Physics, Biology, Chemistry), Envirothon, Science Bowl, Ocean Science Bowl, FIRST Robotics League, Moody's Mega Math Challenge, and other assorted academic competitions  Host annual PuzzlePalooza - Week-long student puzzling competition
INSTITUTIONAL MEMBERS


Science Courses/Electives: Biology, Chemistry, Physics, Earth Science, Analytical Chemistry, Astronomy, Biological Chemistry, Cellular Physiology, Entomology, Genetics, Marine Biology, Mathematical Physics, Optics, Organic Chemistry, Origins of Science, Physical Chemistry, Quantum Physics, Thermodynamics

Technology Courses/Electives: Research & Experimentation, Principles of Engineering, Robotics, Material Science

Research Courses/Electives: Research & Experimentation, Senior Research Project

Computer Science Courses/Electives: Fundamentals of Computer Science, Algorithms and Data Structures, Java, Open Source/Linux, LISP

Participation in National Academic Competitions: Siemens Competition in Math, Science, and Technology, Intel Science Search American Mathematics Association Competition, Biology Olympiad, Chemistry Olympiad, Physics Olympiad, First Robotics, or other robotics competitions

Scholarship Awards: $7.5 million (merit based for class of 2013)

Oxon Hill High School, Science and Technology Center

6701 Leyte Drive
Oxon Hill, MD 20745

Head of school: Dr. Jean Paul Cadet Principal JeanPaul.Cadet@pgcps.org
Primary contact: Dr. Tameka Woodruff Science and Technology Program Coordinator Tameka.Woodruff@pgcps.org 301.749.4300 ext. 84883
Website address: www.pgcps.org/oxonhillhs
Total students enrolled: 578
School structure: Comprehensive full-day (students take STEM and non-STEM courses)
  4-year program (grades 9-12)

PROGRAMS OFFERED

Unique Offerings: NAVSEA partnership, Robotics, Internship programs and partnerships at NASA, USDA, NIH, and area University/Hospital Labs

Math Courses/Electives: AP Statistics and AP Calculus C

Science Courses/Electives: AP Biology, AP Chemistry, AP Physics C, Bio-Organic


Research Courses/Electives: Research Practicum

Computer Science Courses/Electives: AP Computer Science Principles, Intro to Computer Science, & AP Computer Science A

Dual Enrollment: Yes (at school and on college campuses)

Online Courses: Yes

Participation in National Academic Competitions: FIRST Robotics, Maryland Mathematics, Engineering, and Science Achievement (MESA), World Smart STEM Challenge, National SeaPerch Challenge

Scholarship Awards: $11 million

Poolesville High School – A Whole School Magnet

17501 West Willard Rd.
Poolesville, MD 20837

Head of school: Ms. Deena Levine Principal Deena_Levine@mcpsmd.org
Primary contact: Ms. Allison Wilder Magnet Coordinator Allison_C_Wilder@mcpsmd.org
Total students enrolled: 240
School structure: Comprehensive full-day (students take STEM and non-STEM courses)
  Whole-School Magnet (program open to local school district and/or to a magnet population)
  4-year program (grades 9-12)
PROGRAMS OFFERED

Unique Offerings: Poolesville High School has been ranked by Newsweek Magazine as the #1 School in the State of Maryland for the last three years. The whole school magnet opens to all the promise of rigorous, engaging courses taught by inspired teachers. A whole school magnet is organized around instructional “houses”. The two “tested-in” programs that highlight STEM education are the Science, Math, Computer Science House and the Global Ecology House. Over 50 students enter into original research conducted at a private or public research facility between their junior and senior year.

Math Courses/Electives: Algebra I, Honors Geometry, Honors Algebra II, Honors Pre-Calculus, Magnet Precalculus, AP Calculus AB, AP Calculus BC, Statistics (AP or other), Multivariable Calculus and Differential Equations, Analysis 1, Linear Algebra, Vector Calculus are offered

Science Courses/Electives: AP Biology, AP Chemistry, AP Environmental Science, AP Physics B & C, Analytical Chemistry, Biochemistry, Cellular Physiology, Introduction to Genetics, Optics, Quantum Physics and Thermodynamics

Technology Courses/Electives: Principles of Engineering, Robotics, Materials Science

Research Courses/Electives: Research and Experimentation, Principles of Engineering, Research Design, Research Project A, Research Project B, Guided Research


Participation in National Academic Competitions: Siemens Competition in Math, Science, and Technology, Regeneron Science Search, American Mathematics Association Competition, Biology Olympiad, Chemistry Olympiad, Physics Olympiad, First Robotics, or other robotics competitions, Cyberforensics Challenge and Ability One Design Challenge, Davidson Competition, Junior Science and Humanities Symposium

Scholarship Awards: $18 million for the entire senior class

Science and Mathematics Academy at Aberdeen High School

251 Paradise Road
Aberdeen, MD 21001
443.299.9130

Head of school: Sarah Ashley  Program Director  sarah.ashley@hcps.org
Website address: www.scienceandmathacademy.com
Total students enrolled: 205
School structure: Comprehensive full-day (students take STEM and non-STEM courses)
School within a school (program open to local school district and/or to a magnet population)
4-year program (grades 9-12)

PROGRAMS OFFERED

Unique Offerings: The SMA offers a college preparatory program which provides students the opportunity to engage in challenging coursework that will prepare them for Science, Technology, Engineering and Mathematics (STEM) opportunities in higher education. All courses emphasize problem solving and creative thinking by using multiple resources and inquiry-based learning. Advanced placement courses in science and mathematics are offered to students, as well as a large selection of semester electives based on students’ interest and faculty experience: Exclusive to the SMA is a four-year sequenced series of courses called Science, Research, and Technology (SRT I-IV) which provides all students with an opportunity to integrate STEM curriculum in relevant and authentic research. Regular contact with practicing scientists, engineers, and mathematicians is provided throughout the program. Beginning in the junior year of the SRT course sequence, each student is introduced to a breadth of research and career options in: Biotechnology & medical sciences Pre-engineering & physical sciences Computational sciences & mathematics Geosciences & environmental sciences. In the senior year, each student conducts a capstone research project under the mentorship of a professional scientist, mathematician, or engineer. The year-long capstone project concludes with a detailed, scientific poster and a presentation to peers, faculty, parents, and mentors.


Technology Courses/Electives: A four-year sequenced series of courses called Science, Research, and Technology (SRT I-IV), Principles of Engineering, Microcontrollers, Robotics, Computer Aided Drafting and Design, Cryptology, Design Engineering, Technical Writing

Research Courses/Electives: Science, Research, and Technology (SRT) culminates in a year-long capstone project under the mentorship of a professional scientist, mathematician, or engineer. The capstone project concludes with a detailed, scientific poster and a presentation to peers, faculty, parents, and mentors. SRT IV is a two-credit course (about 300 hours of class time).

Computer Science Courses/Electives: Java, C++, VBA

Participation in National Academic Competitions: MAA's American Mathematics Competition, University of Maryland Math Competition, Maryland Math League, Moody's Mega Math (M3) Challenge, Purple Comet Math Meet

Scholarship Awards: Over $8 million per year for our graduating class

MASSACHUSETTS

King Philip Regional High School
201 Franklin St.
Wrentham, MA 02093
508.384.1000 ext. 3443

Head of school: Lisa Mobley Principal mobleyl@kingphilip.org 508.384.1000
Primary contact: Ann Lambert Science Department Head lamberta@kingphilip.org 508.384.1000
Website address: www.kingphilip.org
Total students enrolled: 1,290
School structure: Comprehensive full-day (students take STEM and non-STEM courses)

PROGRAMS OFFERED

Students take physical science in 9th grade and biology in 10th grade. All students take the Biology MCAS. Starting in 10th grade, students may double up on science electives if they so choose. Our science department members are committed to the belief that all students can and should graduate with the foundation knowledge to be well-informed citizen scientists. That being said, because of the number of electives we offer and the interest many of our students take in the sciences, many students enroll in two or three science courses per year so that our enrollment is often 115 - 120% of the student population.

Upper electives include: chemistry and AP Chemistry, physics and AP Physics, marine science, anatomy and physiology, AP Environmental Science, weather and natural disasters, biotechnology, STEM research, and AP Computer Science. Our school is also an AP Capstone school, providing students who have opted for this program to engage in full-year research through the AP Research course.

Unique Offerings: King Philip students have an opportunity to graduate with Distinction in STEM. Candidates propose a project idea, engage in literature review, develop a product that is shared with the greater community in some capacity, write a process paper, then present their project to a faculty panel.

We have a chapter of the Science National Honor Society, and in fact, ours was the first in the Commonwealth of Massachusetts. Each year we have roughly 70 or more students (juniors and seniors) in the society. The SNHS is not an honor society in name only. Our chapter regularly holds STEM events that are open to the entire school, including but not limited to: lectures by officers, King Philip graduates, and professionals working in the STEM field; school-wide engineering challenges; Chem Club activities; and our annual STEM Career Night.

Massachusetts Academy of Math and Science at WPI
85 Prescott St.
Worcester, MA 01605

Head of school: Michael G. Barney Director mbarney@wpi.edu 508.831.5859
Website address: www.massacademy.org
Total students enrolled: 100
School structure: Comprehensive full-day (students take STEM and non-STEM courses)
Located on a University campus
2-year program (grades 11-12)
PROGRAMS OFFERED

Unique Offerings: The Massachusetts Academy of Math and Science was founded by the Massachusetts state legislature in 1992, as a public school of excellence for 100 academically accelerated 11th and 12th graders. The Academy is a tuition-free, collaborative effort among the Commonwealth of Massachusetts, WPI, and state school districts. While we emphasize math and science, our balanced curriculum offers equally rigorous preparation in the Humanities and World Languages. Juniors take a special program of challenging, interactive courses, starting with a three-day off-campus retreat at the beginning of the academic year. Seniors attend classes at WPI, a nationally ranked engineering school - making the Academy the only public school in the state at which students attend a private university full-time as high school seniors. We have a FIRST robotics team (in partnership with WPI), and our students do original science research in conjunction with their participation in the Massachusetts State Science and Engineering Fair. Many students work in local labs with mentors from the university.

Math Courses/Electives: Math modeling in Grade 11; four Math courses (which typically are a sequence of Calculus 1 – 4, but may include Linear Algebra, Differential Equations, Discrete Math or Real Analysis) at WPI in Grade 12.

Science Courses/Electives: Physics in Grade 11; selected Science or Engineering courses at WPI in Grade 12.

Technology Courses/Electives: Computer Science and Scientific and Technical Writing in Grade 11; Extracurricular course in CAD 3-D printing available in grade 11. Selected Technology courses at WPI in Grade 12.

Research Courses/Electives: STEM I individual research projects and STEM II team research or engineering projects focused on assistive technology in Grade 11.

Computer Science Courses/Electives: Computer Science in Grade 11; selected Computer Science courses at WPI in Grade 12.

Dual Enrollment: Yes – Full time senior year at WPI taught by University staff.

Participation in National Academic Competitions: Siemens Competition in Math, Science, and Technology; Regeneron Science

Scholarship Awards: $500,000

Nipmuc Regional High School

90 Pleasant St.
Upton, MA 01568
508.529.2130

Head of school: John Clements  jclément@mursd.org
Website address: www.mursd.org

PROGRAMS OFFERED

Unique Offerings: Nipmuc Regional High School serves approximately 650 students in the communities of Mendon and Upton, Massachusetts. Driven by the core values of high expectations, respect, accountability, and academics, Nipmuc’s students participate in a rigorous academic program. Focused on developing 21st century skills through the application of learning, the school supports students’ personal and academic growth to prepare them for success in students’ personal and academic growth to prepare them for success in college, careers, and the community. Nipmuc is a 1:1 learning school in which all learners use iPads to amplify and accelerate learning. Nipmuc provides students with meaningful ways to connect the classroom to careers and the community through the STEM Scholars Program. It has also established a model for student agency and authentic learning through 21st Century Learning Conferences, full-day learning events offered to students through partnerships with professionals and community leaders.

Uxbridge High School

300 Quaker Highway
Uxbridge, MA 01569
508.278.8633

Head of school: Michael D. Rubin  Principal  mrubin@uxbridge.k12.ma.us  508.278.8633
Website address: https://sites.google.com/a/uxbridge.k12.ma.us/the-uxbridge-high-sch
Total students enrolled: 583
School structure: ‘8-12
PROGRAMS OFFERED

Engineering, Advanced Manufacturing, Biomedical Science, Advanced Digital Media studies.

Unique Offerings: Massachusetts Department of Elementary and Secondary Schools Innovation Pathway school. Primary goal of our school is to facilitate authentic learning in consultation with industry partners and to drive student achievement through rigorous, hands-on projects. Students at UHS complete capstone projects and internships that connect scientific study with industry-driven outcomes.

MICHIGAN

Battle Creek Area Mathematics and Science Center

171 W. Michigan Ave.
Battle Creek MI 49017
269.965.9440

Head of school: Luke Perry  Stem Director lperry@bcamsc.org  269.965.9440
Website address: www.bcamsc.org
Total students enrolled: 406
School structure: Half-day program (students take STEM courses, then return to another school for other courses)
4-year program (grades 9-12)

PROGRAMS OFFERED

Unique Offerings: Partnerships with business and industry - on-site scientists who assist with instruction and laboratory work
Math Courses/Electives: Geometry, Algebra II, Trigonometry, Pre-Calculus, Calculus, Statistics, Trigonometry, Statistics (AP or other), Multivariable Calculus, Linear Algebra
Differential Equations, Discrete Math
Science Courses/Electives: Biology, Chemistry, Physics, Environmental Science, 3 advanced courses in each area as well
Technology Courses/Electives: Advanced Technology, Unix, AP Computer Science, Robotics 1 & 2, Engineering, Information Engineering, Engineering Analysis
Research Courses/Electives: One of the following: Independent Research, Research Methods, Research through elective courses: analytical chemistry, environmental biology, statistics, Independent Research, Research Methods, Research through elective courses: analytical chemistry, environmental biology, statistics
Computer Science Courses/Electives: Advanced Technology, Java, C++, Python, Unix
Participation in National Academic Competitions: Intel Science Search, First Robotics, or other robotics competitions
Scholarship Awards: $2 million

Berrien County Math & Science Center

711 St. Joseph Ave.
Berrien Springs, MI 49103

Head of school: Mike Marinello
Primary contact: Tonya Snyder Coordinator tonya.snyder@berrienresa.org  269.471.7725
Website address: www.berrienresa.org/bcmsc
Total students enrolled: 106
School structure: Half-day program (students take STEM courses, then return to another school for other courses)
Located on a University campus
4-year program (grades 9-12)
PROGRAMS OFFERED

Unique Offerings: Smoky Mountain weekend, physics Day @ Great America, Sam Rhine conference, fab lab access, Chem research opportunities

Math Courses/Electives: Geometry, Algebra II, Pre-Calculus, AP Calculus AB, Statistics (AP or other), Calculus BC

Science Courses/Electives: Biology, Chemistry, Physics

Technology Courses/Electives: Computer Tools, Computer Programming

Research Courses/Electives: Research Biology, Chem II

Computer Science Courses/Electives: Computer Tools, Computer Programming, C++

Dual Enrollment: Yes – At the college/university, taught by college/university staff

Online Courses: Yes

Distance Learning: Yes

Participation in National Academic Competitions: Intel Science Search, Physics Olympiad, First Robotics, or other robotics competitions

Scholarship Awards: $2 million

Kalamazoo Area Mathematics and Science Center

600 Vine Street Suite 400
Kalamazoo, MI 49008

Primary contact: Dr. Michael Tanoff  Director  mtanoff@kamsc.k12.mi.us  269.337.0004

Website address: kamsconline.com

Total students enrolled: 300

School structure: Half-day program. Students take STEM courses, then return to another school for balance of courses.

PROGRAMS OFFERED

Unique Offerings: 9-11 Research science thread, national and international computer competitions. Research with mentors in the community. Cricket teams.

Math Courses/Electives: Geometry, Algebra II, Pre-Calculus, AP Calculus AB, AP Calculus BC, AP Statistics, Multivariable Calculus, Discrete Math

Science Courses/Electives: Biology, Chemistry, Physics, at least one additional lab science course (2 semesters)*

Technology Courses/Electives: KAMSC Honors Information Technology (9th grade)

Research Courses/Electives: KAMSC Research Science, KAMSC Independent Research Team

Computer Science Courses/Electives: KAMSC Honors Computer Studies (10th grade), Java, C++, AP Computer Science A, KAMSC Advanced Computer Science

Participation in National Academic Competitions: American Mathematics Association Competition, Intel International Science and Engineering Fair; National and international CS competitions; TSA TEAMS Competition


Lakeshore High School Math/Science Center

5771 Cleveland Ave.
Stevensville, MI 49127

Head of school: Brad Brunner  bbrunner@lakeshoresps.org  269.428.1402

Website address: www.lakeshoreschools.k12.mi.us/high
**The Mississippi School for Mathematics and Science**

1100 College Street, MUW-1627
Columbus, MS 39701
662.329.7674

**Head of school:** Dr. Germain McConnell  
**Executive Director** gmconnell@themsms.org

**Primary contact:** Ms. Amber Lynn Moore  
**Senior Executive Assistant** amoore@themsms.org
662.329.7674

**Website address:** www.themsms.org

**Total students enrolled:** 235 (Capacity of 300 students when fully funded)

**School structure:** Comprehensive full-day (students take STEM and non-STEM courses)

**PROGRAMS OFFERED**

**Unique Offerings:** MSMS provides innovative STEM education and a well-rounded high school experience for attending students. This is accomplished through strong partnerships with state universities, practitioners, and businesses throughout Mississippi. Most of the dual-credit courses are offered free through the Mississippi University for Women (MUW), which hosts MSMS on its campus. To pursue research interests, all students at MSMS can participate in semester-long research internships at Mississippi State University (MSU), as well as summer research internships at other universities. To explore career interests, students can participate in the Mentorship and Internship programs during the school year and during the summer. Furthermore, students are encouraged to explore ways they can impact the future economy of the state through the MSMS Entrepreneurship program.

Students are engaged in weekly laboratory experiences in their science courses and are required to take a minimum of two classes in each of the three sciences (biology, chemistry, and physics). At least four mathematics courses must be taken, with all students required to take Calculus and Statistics. A variety of computer science and engineering courses are also available, with several of them offered as dualcredit through MSU. Many students participate in the Engineering Club and implement creative project ideas in the newly formed MSMS Engineering Lab. Though STEM subjects are the primary focus, MSMS also offers rich programs in humanities and arts, including instruction in five languages, opportunities for participation in dramatic performances, and visual arts offerings in drawing, sculpture, and painting. The MSMS Tales from the Crypt class is a research-based U.S. History class with strong genealogical and performance components that has been recognized by several entities, including the National Endowment for the Humanities. Additionally, MSMS music students tour through the state each year, performing and exploring the state’s rich musical heritage. Finally, MSMS students have opportunities to impact students across Mississippi through participation in various outreach activities that annually reach approximately 6,000 students.


**Science Courses/Electives:** AP Biology, Cell Biology, Genetics, Human Infectious Diseases, Microbiology, Ecology, Biochemistry, Properties of Matter, Chemical Reactions, AP Chemistry, Analytical Chemistry, Physical Chemistry, Organic Chemistry, AP Physics 1, AP Physics 2, Advanced Problems in Physics, Electricity and Magnetism, Mechanics, Modern Physics, Astronomy/Astrophysics

**Technology Courses/Electives:** Electronics, Robotics, Introduction to Engineering (dualcredit), Introduction to Engineering-Chemical and Petroleum (dual-credit)

**Research Courses/Electives:** Research Internship, Survey of Scientific Research, Tales from the Crypt (a research-based U.S. History course)

**Computer Science Courses/Electives:** Introduction to Programming (dual-credit with lab); Intermediate Programming (dual-credit with lab); Game Design, Robotics, Integrated Computer Science

**Dual Enrollment:** Yes – At school, taught by school staff

**Participation in National Academic Competitions:** International Science and Engineering Fair; Siemens Competition in Math, Science, and Technology; Science Olympiad; Science Bowl; American Association of Physics Teachers (AAPT) Bowl; First Robotics; SeaPerch; American Mathematics Competitions; National Assessment and Testing math contests; Arete Math Madness, CoMAP hiCMC, Mathleague; National Scholastic Art & Writing Awards program

**Scholarship Awards:** Class of 2018 accepted more than $9.6 million
MISSOURI

Rockhurst High School
9301 State Line Road
Kansas City, MO 64114

Contact: Greg Owsley  STEAM Director  gowsley@rockhursths.edu
816.363.2036 ext. 287
Secondary Contact: Paul Winkele  pwinkele@rockhursths.edu
www.rockhursths.edu

Rockhurst High School is the only Jesuit Catholic private college preparatory school for boys in grades 9 – 12 in the Kansas City area. Rockhurst draws a student body that is ethnically and socio-economically diverse from 95 different zip codes, 56 in Missouri and 39 in Kansas with 20% of the student body self-identifying as a student of color.

AdvancED STEM Certification

Rockhurst High School is proud to have the distinction of earning AdvancED STEM Certification. This certification recognizes that its STEM educational programs have met the rigor and substance vital to creating and sustaining superior, student-centered STEM teaching and learning programs. Rockhurst is committed to preparing learners for the careers of tomorrow by continuing to foster and perpetuate their enthusiasm for STEM disciplines today. The focus on STEM demonstrates continued commitment to fulfill the school’s mission and vision.

Student Life

More than 45 co-curricular activities are offered in addition to 12 varsity athletic teams (in the past 10 years, teams have won 32 Missouri titles and 72 district championships). Students hold positions on key decision-making panels that affect the school climate (i.e. Student Government Association, Student Life Committee). High quality acting, vocal and instrumental programs have enabled students to participate in community events and win awards in state band and orchestra competitions. Students write for the nationally recognized award-winning publications: Prep News, the Quarry Yearbook and the Rock Collection Literary Magazine.

Students participate in the “Total Ignatian Experience,” an immersion program, in and out of Kansas City, and internationally, each year. These trips are built on the four pillars of service, community, simplicity, and prayer. All students are required to complete over 150 service hours to graduate. In the 2016 school year, Rockhurst students completed more than 45,000 hours of service. In addition, 31 students received the 2016 Presidential Volunteer Service Award. Each year funding efforts led by student-leaders raise over $50,000 for local and international aid organizations, emphasizing the school’s mission of being compassionate to those in need.

Students are recognized on a yearly basis through the National Merit Foundation Scholarship Program.
Class of 2016: 12 Finalists 13 Semifinalists 10 Commended.

Unique Offerings:

Sophomore Conference is a unique experience in which each sophomore works on a monthly project focused on their personal growth and interpersonal skills. Inspired by a project based learning model, students set goals, measure their progress, and pitch their learning experiences to an audience every month. Seniors participate in the Senior Service Project which is a three week Christian service activity in which students are asked to work and learn with persons in the greater community who have special needs. They do this full time, outside the familiar environments of their homes and school.

Unique Spaces: An Academic Learning Commons leverages modern day design to enhance learning. Breakout conference rooms, silent study rooms, a maker counter, and the pitch space with at least weekly guest speakers creates a vibrant learning environment. Traditional classrooms are steadily being converted to Active Learning Classrooms. Approximately one-third of all classrooms are currently active learning classrooms. This rooms promote a student-centered, collaborative, and inquiry-based learning environment.
St. Teresa’s Academy
5600 Main St.
Kansas City, MO 64113
816.501.0036

Head of school: Nan Bone President nbone@stteresasacademy.org 816.501.0021
Primary contact: Barbara McCormick Principal bmccormick@stteresasacademy.org 816-501-0036
Website address: stteresasacademy.org
Total students enrolled: 600

School structure: College Preparatory full-day (students take STEM and non-STEM courses)
4-year program (grades 9-12)
Independent Catholic All Girls High School

PROGRAMS OFFERED
St. Teresa’s Academy, a Catholic, independent, college preparatory high school, sponsored by the Sisters of St. Joseph of Carondelet, is committed to the education of young women. The Academy, rooted in Christian values and embracing a diverse student body, promotes excellence in education through a challenging curriculum, personal responsibility, and participation in extra-curricular activities.

Unique Offerings: STA is a one-to-one campus where all students have personal Surface Pro 4s. The flexible module schedule allows students to have full enrollment in a variety of course offerings as well as access to additional resources and opportunities similar to a college environment. One resource is the Math Hub where students have full-day open access to math faculty, mentors, and supplemental exploratory activities.

Science Courses/Electives: Advanced Biology, AP Biology, Honors Chemistry, AP Chemistry, Honors Physics, College Physics, AP Environmental Science, Forensic Science I & II, Anatomy & Physiology I & II, and Astronomy. Additionally, Neuroscience and Marine Science are available online through One Schoolhouse.

Computer Science & Technology Courses/Electives: Robots devices, Motion, Sensing & Control; Computer Programming I; AP Computer Science Principles, AP Computer Science A, 2D/3D Game Development, App Development, and SWAT - Students Working to Advance Technology.

Digital Art Courses/Electives: 2D/3D Spatial & Design; Digital Illustration & Animation; Print Design & Layout; Digital Photography; and Graphic Design.

Dual Enrollment: St. Teresa’s Academy instructors teach dual credit courses through Rockhurst University and University of MO - Kansas City at our high school campus including European History I & II; PreCalculus, Calculus I and II; French III & IV, Spanish III & IV, and English Composition I & II. Students may take additional courses on the campus of Rockhurst University.

STEAM Certificate: The STEAM Certificate acknowledges students for their achievements and involvement in STEAM related activities. This is a multi-year effort that focuses on several academic subject areas and community learning. The program is designed to provide preparation and opportunities related to STEAM fields in and beyond the typical classroom day. Students completing the STEAM certificate will receive special recognition in the commencement program as well as documentation on their transcript. An online application is available for sophomores and juniors.

eMentoring: A junior looking into possible careers can make an online connection between herself and a professional who is working in a career of interest to the student through the eMentoring program. With the guidance of a mentor, the student becomes aware of the knowledge and skills needed to take a realistic look at her future, to gain awareness about the demands and opportunities within the job market and to begin to develop a plan that puts her on the path towards success.

STEM Extracurricular: Math Mentors, STEM Club, Girls Who Code

Participation in National Academic Competitions: Math Team; First Tech Challenge Robotics; Science Quiz Bowl; Future Business Leaders of America; Scholastic Writing; Scholastic Art; National Scholastic Publications Association; and Debate.

NEW HAMPSHIRE

The Academy for Science and Design
486 Amherst St. Unit 1
Nashua, NH 03054
603.595.4705

Head of school: Jennifer Cava  jennifer.cava@asdnh.org
Primary contact: Stephanie Dumoski  Coordinator of Curriculum & Scheduling  stephanie.dumoski@asdnh.org
Website address: www.asdnh.org
Total students enrolled: 525
School structure: Comprehensive full-day Public Charter School (students take STEM and non-STEM courses)

PROGRAMS OFFERED

Unique Offerings: The Academy for Science & Design’s STEM-focused program is advancing global citizenship by fostering curiosity, innovation, and leadership for all learners. ASD subscribes to the core beliefs that curiosity is a catalyst for learning, students deserve to be challenge, we are all global citizens, teachers are also learners, and industry partners are essential. These beliefs form the foundation of our mission to foster an environment that inspires, nurtures, and challenges every student; cultivating their individual abilities to lead advancements in science and technology, as well as to become thoughtful, compassionate, and engaged citizens.

Math Courses/Electives: Algebra 1; Accelerated Math 1, 2, and 3; Advanced Calculus, Advanced Statistics, Multivariable Calculus, Linear Algebra, Differential Equations, Discrete Math

NEW JERSEY

Academy of Allied Health & Science
2325 Heck Ave.
Neptune, NJ 07753

Head of school: Paul Mucciarone  pmucciarone@ctemc.org  732.775.0058
Website address: aahs.ctemc.org

PROGRAMS OFFERED

Unique Offerings: The Academy of Allied Health and Science prepares and motivates students to pursue further education towards a career in the medical sciences through a rigorous specialized curriculum and community-based partnerships, inspiring students to serve society with compassion, skill, and vision.

Unique Offerings: Dual Enrollment in Dynamics of Health Care in Society, Anatomy and Physiology 1, Anatomy and Physiology 2, Nutrition, Emergency and Clinical Care, and Medical Terminology with Rutgers University, School of Health Related Professions, and Introduction to Cellular and Molecular Biology with Georgian Court University.

Clinical Experience through freshman year field trips to a variety of Health Care delivery providers, job shadowing rotations at Jersey Shore University Medical Center during sophomore year, service learning in public health during junior year, and an eight-week mentorship with a health care professional during senior year.

Bergen County Academies
200 Hackensack Avenue
Hackensack, NJ 07601

Head of school: Russell Davis  Principal  rusdav@bergen.org  201.343.6000
Website address: bcts.bergen.org
Total students enrolled: 1,057

School structure: Comprehensive full-day (students take STEM and non-STEM courses) 4-year program (grades 9-12)

PROGRAMS OFFERED

Unique Offerings: Seven unique Academies comprise the Bergen County Academies - Science, Business, Computer Science, Culinary Arts, Engineering, Medical, and Visual and Performing Arts. We offer a variety of in house research programs including Stem Cell Research, Biotechnology, Nanotechnology as well as a Microscopy lab featuring two state of the art electron microscopes. Our students have access to an in house Bloomberg terminal. Students can take part in Global Exchange Programs with a growing list of countries including China, Japan, Singapore, South Korea and Greece. Students can participate in electives across all Academies, as
well as competitive and social Projects and Clubs from a variety of disciplines. In addition to the National Academic Competitions, we participate in Model UN, DECA, SkillsUSA, Debate Team and Quiz Bowl. We offer many AP and IB courses. All seniors participate in workplace internships one full day a week. We are planning to build a new Energy & Sustainability Center.


Science Courses/Electives: Biology, Chemistry, Physics, Environmental Science


Research Courses/Electives: Chem/Nano Research, Electron Microscopy, Bio Research

Computer Science Courses/Electives: Java, Open Source/Linux, C++, Python, Oracle

Dual Enrollment: Yes – At school, taught by school staff

Participation in National Academic Competitions: Siemens Competition in Math, Science, and Technology, Intel Science Talent Search, American Mathematics Association Competition, Biology Olympiad, Chemistry Olympiad, Physics Olympiad, Computational Linguistics Olympiad, First Robotics, or other robotics competitions

Scholarship Awards: $15 million +

Biotechnology High School
5000 Kozloski Rd
Freehold, NJ 07728

Head of school: Sean Meehan Principal smeehan@ctemc.org 732.431.7208
Website address: www.bths.mcvsd.org
Total students enrolled: 321
School structure: Comprehensive full-day (students take STEM and non-STEM courses)

Biotechnology High School, an International Baccalaureate World School, integrates life science, technology, and engineering into a rigorous curriculum that inspires students toward open-minded participation in the global community and prepares them for higher education and leadership in an increasingly demanding workplace through scholarly research, original investigations, and interactive partnerships.

Excellence is in our DNA

PROGRAMS OFFERED

Unique Offerings: All students become IB Diploma candidates in their Junior & Senior year. Seniors complete a 5-week, full-time mentorship experience.

Math Courses/Electives: Geometry, Algebra II/Trigonometry, IB Math 1 SL, IB Math 2 SL, AP Calculus AB, AP Calculus BC

Science Courses/Electives: Biology/Genetics, Chemistry, Molecular/Agricultural Biotechnology, IB Biology HL 1, IB Physics HL 1, IB Chemistry HL 1, IB Biology HL 2, IB Physics HL 2, IB Chemistry HL 2, Anatomy and Physiology, BioEngineering, BioMedical Engineering, Developmental Biology, Environmental Biotechnology, Forensic Analysis, Genomics, Proteomics and Bioinformatics, Neuroscience and Biopsychology

Research Courses/Electives: Intro to Experimental Design, Biotech Lab Skills, Advanced Experimental Design, Cell Culture and Molecular Biology Techniques

Computer Science Courses/Electives: Digital Literacy, AP Computer Science A

Dual Enrollment: No

HIGH TECHNOLOGY HIGH SCHOOL

765 Newman Springs Road
Lincroft, NJ 07738

Head of school: Kevin Bals  Principal  kbals@ctemc.org  732.842.8444
Primary contact: Mike Roche  Science Teacher  roche@ctemc.org  732.842.8444
Website address:  www.hths.mcvsd.org
Total students enrolled:  285
School structure: Comprehensive full-day Comprehensive full-day (students take STEM and non-STEM courses)

PROGRAMS OFFERED

Unique Offerings: All freshman students take Intro to Research and Data Analysis to prepare them for their sophomore year Research Project. All seniors complete a one-semester mentorship in a professional work or university setting one full day a week. All students are required to take AP Computer Science A and an AP Calculus and AP Science class.
Math Courses/Electives: Geometry, Algebra II, Trigonometry, Pre-Calculus, Calculus, AP Calculus AB, AP Calculus BC Multivariable Calculus, Statistics (AP or other), Linear Algebra, Differential Equations Science Courses/Electives: Biology, Chemistry, Physics, AP Biology, AP Chemistry, AP Physics
Technology Courses/Electives: Introduction to Engineering Design, Principles of Engineering, Computer Integrated Manufacturing, Digital Electronics, Civil Engineering & Architecture, Computer Science and Software Engineering, Biological Engineering and Environmental Sustainability, Engineering Design and Development
Research Courses/Electives: Data Analysis, Intro to Research, Research Practicum
Computer Science Courses/Electives: AP Computer Science A, Computer Science and Software Engineering
Dual Enrollment: Yes – At school, taught by school staff. At the college/university, taught by college/university staff

Marine Academy of Science & Technology

305 Mast Way
Highlands, NJ 07732

Primary Contact: Earl Moore  Principal  emoore@ctemc.org  732.291.0995
Secondary Contact: Lisa Haas  lhaas@ctemc.org
Website address:  mast.ctemc.org

PROGRAMS OFFERED

The Marine Academy of Science and Technology is a four-year college preparatory program with a thematic, research-based focus on technology and the marine sciences. Located within Gateway National Park, Sandy Hook, New Jersey, MAST is administered by the Monmouth County Vocational School District. MAST offers students the opportunity to pursue study in the fields of oceanography, and technology and engineering with a marine sciences theme, and has a military component requiring each student to participate in the Naval Junior Reserve Officer Training Corps (NJROTC). To facilitate its mission, MAST utilizes a number of technology labs, including a state-of-the-art Computer Aided Design (CAD) lab, a 3700 sq. ft. materials testing and fabrication lab, and a 65-foot research vessel, Blue Sea, which is utilized by all grade levels and sails several times each week throughout the Spring and Fall seasons. MAST also operates and conducts its own research programs out of the James J. Howard Marine Sciences Laboratory, a marine research facility shared by the National Oceanic and Atmospheric Administration (NOAA) and the State of New Jersey, which sits directly adjacent to the MAST’s 3½-acre campus. Collectively, these resources provide a learning environment that allows for valid, meaningful scientific research using a wide variety of technologies, helping students become continuous learners with science, math, and technology skills equipped for the 21st Century.
Marine Academy of Technology and Environmental Science

195 Cedar Bridge Road
Manahawkin, NJ 08050
609.978.2077

Head of school: John Biscardi  Principal  jbiscardi@mail.ocvts.org
609.978.8439

Total students enrolled: 300
School structure: Comprehensive full-day (students take STEM and non-STEM courses)
4-year program (grades 9-12)
Website address: www.ocvts.org

PROGRAMS OFFERED

MATES is a specialized high school developed around the marine and environmental science theme. MATES is geared toward students who wish to concentrate their studies in the areas of math and science.

The Mission of the Marine Academy of Technology and Environmental Science (MATES) is to provide an opportunity to students in Ocean County to become critical thinkers and problem solvers. Students of this academy will participate in an intimate, integrated, and challenging curriculum with a focus on marine and environmental science. MATES will empower its students with skills important to post-secondary study and employment in a global community.

Math and Science Magnet Program at Morris Hills

520 West Main St.
Rockaway, NJ 07866

Head of school: Dr. Kevin S Doyle
Ed.D. Coordinator of the Math & Science Magnet Program
kdoyle@mhrd.org  973.664.2242

Secondary contact: Nisha Zoeller  nzoeller@mhrd.org  973.664.2293
Website address: https://www.mhrd.org/domain/103
Total students enrolled: 157
School structure: The Magnet Program is part of the NJ Interdistrict School Choice Program and is open to qualified students who live in New Jersey

PROGRAMS OFFERED

AP Capstone, Aviation & Aerospace

Unique Offerings: Students will complete an independent research project, write a dissertation on their project, and orally defend it in front of a team of experts. Students work on a variety of projects aimed at addressing issues in the gap of knowledge of their research interests.

Math Courses/Electives: Geometry, Algebra II, Pre-Calculus, Calculus, Advanced Statistics, Multivariable Calculus, AP Statistics, AP Calculus AB/BC

Science Courses/Electives: Biology, Chemistry, Physics, Environmental Science, Forensic Science, Aviation & Aerospace, Introduction to Flight & UAS, Anatomy & Physiology, AP Biology, AP Chemistry, AP Physics 1, AP Physics C, and AP Environmental Science

Research Courses/Electives: AP Seminar, AP Research

Computer Science Courses/Electives: AP Computer Principles, AP Computer Science A

Dual Enrollment: Yes – At school, taught by school staff

Participation in National Academic Competitions: American Mathematics Association Competition, First Robotics, or other robotics competitions

Scholarship Awards: $7,380,000
The Academy for Mathematics, Science and Engineering

520 West Main Street
Rockaway, NJ 07866

Head of school: Cheryl Giordano  Director  cgiordano@mhrd.org  973.664.2347
Website address: www.mhrd.org/domain/102

PROGRAMS OFFERED

Unique Offerings: The Academy for Mathematics, Science, and Engineering, located at Morris Hills High School, is a rigorous, highly focused four year program for Morris County Students with career interests in mathematics, science, or engineering. Students complete a challenging curriculum and participate in technical internships with partners from business and industry. Admission to the Academy is competitive, with students selected from throughout Morris County. The Academy is a collaborative effort between the Morris County Board of Chosen Freeholders, the Morris County Vocational School District, and the Morris Hills Regional District. Academy students are enrolled in the Morris County Vocational School District, which is accredited by the Middle States Association of Colleges and Schools and the Council on Occupational Education. The Academy for Mathematics, Science, and Engineering was ranked 2nd in the nation in the 2016 Newsweek high school rankings.

NEW YORK

The Bronx High School of Science

75 West 205 Street
Bronx, NY 10468

Head of school: Dr. Jean Donahue  Principal
Primary contact: Phoebe Cooper  Assistant Principal of Organization  cooper@bxscience.edu
Website address: www.bxscience.edu
Total students enrolled: 3,000
School structure: Comprehensive full-day (students take STEM and non-STEM courses)

PROGRAMS OFFERED

Unique Offerings: Research, Intel, Seimens-Westinghouse, Sigma Xi, ISEF, First Robotics, Math Team, Chess Team, Debate
Math Courses/Electives: Algebra I, Geometry, Algebra II & Trigonometry, Pre-Calculus, AP Statistics (and other), Multivariable Calculus, Linear Algebra, Differential Equations, AP Computer Science, Mathematics/Computer Science Research, Math Team, Robotics, Game Programming, App Development
Research Courses/Electives: Research Literacy, Sophomore Research, Junior and Senior Research
Computer Science Courses/Electives: Java, C++, Python, C, Mathematica, MathLab, RobotC
Dual Enrollment: Yes – At school, taught by school staff
Participation in National Academic Competitions: Siemens Competition in Math, Science, and Technology, Intel Science Search, American Mathematics Association Competition, Biology Olympiad, Chemistry Olympiad, Physics Olympiad, Computational Linguistics Olympiad, First Robotics, or other robotics competitions, Sigma Xi
Scholarship Awards: $40,000,000
Brooklyn Technical High School
29 Fort Greene Pl.
Brooklyn, NY 11217
718.804.6400

Head of school: David Newman  Interim Principal
Website address: bths.entest.org

PROGRAMS OFFERED

Unique Offerings: In 1922, the vision and dreams of founding Principal Dr. Albert Colston became a reality and Brooklyn Technical High School opened to the boys of New York City. Since inception, Brooklyn Tech provided a significant part of the solution to the national shortage of trained problem solvers, aspiring engineers, and applied scientists. Now 95 years later, we continue to fulfill our mission and sustain the legacy of excellence created by Tech students through the decades.

The transformational learning experiences provided at Tech are well documented by the remarkable achievements of our esteemed alumni. Technites are in the vanguard of every industry. Among our graduates are Nobel Prize laureates, inventors and innovators, astronauts, medical professionals, distinguished scientists, renowned engineers and architects, as well as noted leaders in business, finance, industry, publishing, and the arts.

High School for Math, Science and Engineering at City College
240 Convent Avenue
NY, NY 10031

Head of school: Crystal Bonds  Principal
Primary contact: Wylie Burgan, AP  wburgan@hsmse.org  212.281.6490
Website address: www.hsmse.org
Total students enrolled: 470
School structure: Comprehensive full-day (students take STEM and non-STEM courses)
Located on a University campus
4-year program (grades 9-12)

PROGRAMS OFFERED

What Makes Us Unique: HSMSE is one of NYC's elite specialized high schools that champions a rigorous curriculum in both STEM and the humanities. Our collaborative approach to education fosters a supportive community that raises the performance level of our students. At 99% graduation rate and 99% college readiness, we continue to thrive for excellence. We proudly ranked #4 among NYC HSs. Our student body, a close knit community, is ranked the most diverse in the city. Unique Offerings: Goethe Institute Partnership, Trips to Germany, Partnership with Mt. Sinai Hospital Medical Center, Computer Networking, Research Alliance with City College Grove School of Engineering, Dual Enrollment in HSMSE and CCNY, taught by school and college faculty, Four year sequence of research.

Math Courses/Electives: Algebra I, Geometry, Algebra II, Trigonometry, Pre-Calculus, Calculus, AP Calculus AB, AP Calculus BC, AP Statistics, AP Computer Science

Science Courses/Electives: Biology, Chemistry, Physics, Advanced Biology, Advance Physics, AP Chemistry

Technology Courses/Electives: AP Computer Science, Civil Engineering and Architecture, Drafting for Design and Production, Principals of Engineering, Digital Electronics

Research Courses/Electives: Introduction to Research, Academic Writing and Research

Computer Science Courses/Electives: AP Comp Sci - JAVA, Java

Dual Enrollment: Yes – At the college/university, taught by school staff. At school, taught by college/university staff.


Scholarship Awards: approximately $7 million
Hunter College High School
71 E 94th Street
New York, NY 10128

Head of school:  Dr. Tony Fisher  Principal  tfisher@hccs.hunter.cuny.edu  212.860.1406
Website address:  www.hunterschools.org/hs
Total students enrolled:  1,225 for grades 7-12
School structure:  Comprehensive full-day (students take STEM and non-STEM courses)

PROGRAMS OFFERED
Unique Offerings:  Access to lab database through Science Research Program
Math Courses/Electives:  Algebra I, Geometry, Algebra II, Trigonometry, Pre-Calculus, Statistics (AP or other), Calculus, Calculus AB and Calculus BC are offered, along with others at Columbia and Hunter College
Science Courses/Electives:  Biology, Chemistry, Physics, Environmental Science
Technology Courses/Electives:  AP Computer Science
Research Courses/Electives:  Research Program (not a course)
Computer Science Courses/Electives:  Java, Open Source/Linux, C++

Millennium Brooklyn High School
237 7th Ave
Brooklyn, NY 11215

Head of school:  Kevin Conway
Primary contact:  Lindsey Baumgarten  Assistant Principal  lbaumgarten@millenniumbrooklynhs.org  718.832.4333
Website address:  www.millenniumbrooklynhs.org
Total students enrolled:  400
School structure:  Comprehensive full-day (students take STEM and non-STEM courses)
4-year program (grades 9-12)

PROGRAMS OFFERED
Unique Offerings:  Creating a mentorship/internship program. Will be available for students at the end of grade 11. We offer a mandatory research track: 9th grade Quantitative Research; 10th grade; Qualitative Research; 11th & 12th grade will have electives such as anthropology; statistics; architectural design, etc.
Math Courses/Electives:  Algebra I, Geometry, Algebra II, Trigonometry, Pre-Calculus, Calculus, AP Calculus AB, AP Calculus BC
Statistics (AP or other), Business Math
Science Courses/Electives:  Biology, Chemistry, Physics, Environmental Science AP
Technology Courses/Electives:  Architectural Design offered as a choice for research elective
Research Courses/Electives:  Quantitative, Qualitative, Research Internship, plus choice of: Social Justice; Anthropology; Architectural Design; Statistics; AP Statistics. Still planning as our school grows.
Dual Enrollment:  Yes – At the college/university, taught by college/university staff
Stuyvesant High School
345 Chambers Street Room 207
New York, NY 10282
212.312.4800 x2070

Head of school: Eric Contreras  econtre@schools.nyc.gov
Primary contact: Dr. Gary L. Haber  ghaber2@schools.nyc.gov
Website address: www.stuy.edu
Total students enrolled: 3,300
School structure: Comprehensive Full-Day (Students take STEM and non-STEM courses)
4-year program (grades 9-12)

PROGRAMS OFFERED

Unique Offerings: Robotics, Intel Research Class, Modern Physics & Nanotechnology, Topics in Neurobiology, Urban Ecology, Medical Ethics
Math Courses/Electives: Algebra I, Geometry, Algebra II, Trigonometry, Pre-Calculus, Statistics (AP or other), Business Math, Multivariable Calculus, Differential Equations
Science Courses/Electives: Biology, Chemistry, Physics, Many Science electives
Dual Enrollment: Yes – At the college/university, taught by college/university staff

North Carolina School of Science and Math (NCSSM)
PO Box 2418
1219 Broad Street
Durham, NC 27715

Head of school: Dr. Todd Roberts  Chancellor  roberts@ncssm.edu
Primary contact: Letita Mason  Director of Admissions  masonl@ncssm.edu  919.416.2849
Website address: www.ncssm.edu
Total students enrolled: 680 residential; 240 through Online program
School structure: Comprehensive full-day (students take STEM and non-STEM courses)
Residential (students live on campus)

PROGRAMS OFFERED

Unique Offerings: NCSSM offers a mentorship program, where students spend two afternoons a week during their senior year doing research under the guidance of a mentor at one of the local universities or Research Triangle companies. Students conduct a literature review of their research topic, write a scientific paper, and present their findings at one or more research symposia in the spring. Mini-Term is another means by which NCSSM provides significant opportunities for students to engage in unique educational experiences outside of the regular school curriculum and beyond the traditional classroom context. During Mini-Term, in the place of regular classes, students choose between two stimulating academic options. Students either participate in one of the specialized mini-courses (7-10 days long) arranged by one or more NCSSM faculty members, which include both on-campus courses and domestic or international trips. Students can also conduct an approved educational project of the student’s own design with the sponsorship of an adult member of the NCSSM community. The goal is to support students in a rigorous exploration of a subject area of great interest to them in a way that contributes to their academic and personal growth and serve them well in their future academic aspirations. The Summer Service requirement at NCSSM has always been a staple since the school’s beginning. The Summer Service Program allows students to give back to their home community in a variety of ways that can be catered around individual passions, hobbies, interests and possible careers. Students are expected to provide a minimum of 60 hours of service to a nonprofit organization within North Carolina during the summer of their Junior or Senior year. Students are also expected to complete 3 hours of work service per week for a department on campus. This program is designed to provide “job training”, “soft skill development,” and a mentoring opportunity with adults on campus. It also provides a valuable service to the NCSSM community. Students receive a grade each trimester (satisfactory/unsatisfactory) from his or her supervisor which is part of the student transcript.
Math Courses/Electives: Pre-Calculus, Statistics (AP or other), Multivariable Calculus, Differential Equations, Discrete Math
AP Calculus AB, AP Calculus BC, Finite Mathematics, Advanced Geometry, Numerical Analysis, Introduction to Complex Systems,
Number Theory, Modeling with Matrices, Combinatorics and Game Theory, Graph Theory and Networks, Structure and Dynamics
of Modern Networks, Mathematical Modeling, Group Theory

Science Courses/Electives: Biology, Chemistry, Physics, Environmental Science, Anatomy and Physiology, Classical Genetics,
Molecular Genetics, Developmental Biology, Evolution, Ecology, Aquatic Ecology, Climate Change Biology, Molecular and Cellular
Biology, Immunology, AP Environmental Science, AP Biology, AP Chemistry, Analytical Chemistry, Organic Chemistry, Environmental
Chemistry, Organic and Biochemistry, Polymer Chemistry, Astronomy, Modern Physics, AP Physics B, AP Physics C-Mechanics,
AP Physics C-Electricity and Magnetism; Fluids, Thermodynamics, Electromagnetism, and Optics; Astrophysics; Galaxies and
Cosmology, Introduction to Applied Chemistry and Engineering, Introduction to Computational Chemistry, Introduction to
Medicinal Chemistry, Bioinformatics, Green Environmental Geology, Forensic Science

Engineering-Mechanical, Introduction to Engineering-Electrical, Architecture, Engineering the Modern, Biomedical Instrumentation,
Statics

Research Courses/Electives: Research in Biology, Research in Chemistry, Research in Physics, Research in Mathematics,
Research in Computational Science, Mentorship-Senior Research, Research Experience in Biology, Research Experience in
Environmental Science, Research Experience in Applied Chemistry and Engineering, Research Experience Mathematical Chemistry,
Research Experience in Physics, Research Experience in Computer Science, Research Experience in Humanities

Computer Science Courses/Electives: Java, C++, Python

Participation in National Academic Competitions: Siemens Competition in Math, Science, and Technology, Intel
Science Search, American Mathematics Association Competition, Biology Olympiad, Chemistry Olympiad, Physics Olympiad,
Computational Linguistics Olympiad, First Robotics, or other robotics competitions, Brain Bee, Conrad, Exploravision, I-GEM,
I-SWEEEP, Singapore International Math Challenge, Singapore International Science Challenge, National Economics Challenge

Scholarship Awards: $17,000,000

Ohio

Hathaway Brown School

19600 North Park Blvd.
Shaker Heights, OH
216.932.4214

Head of school:  Dr. Mary Frances “Fran” Bisselle  Head of School  fbisselle@hb.edu  216.320.8774
Primary contact:  Dr. Crystal Miller  Director of the Center for Science & Engineering Research
cmiller@hb.edu  216.320.8761

Website address:  https://www.hb.edu/
Total students enrolled:  380 in the Upper School (9-12)
School structure:  Comprehensive full-day
Pre-K through 12

Programs Offered

Unique Offerings: Hathaway Brown School is an independent girls’ school committed to the goal of lifelong learning, preparing
students to enter that world poised and empowered to ask questions, challenge conventions, and make their own mark. Unique to
HB is the Institute for 21st Century Education. At its most basic level, the Institute is an assortment of programs, or “Centers”,
that students can join to more deeply experience a discipline that students explore in their core classes. Each Center helps students and
teachers engage with the world’s promises and problems. Students can pursue a diploma designation in Centers for Business and
Finance, Sustainability, Technology and Invention, Creative Arts, and more.

HB, in its motto, “We learn not for School, but for Life,” set forth its responsibility to its students – that the education they receive
within School walls is not only applicable in the classroom but also has ever more significant applications beyond graduation.
Students in the Science Research & Engineering Program (SREP) conduct research with professional scientists and engineers to
learn how to think critically about existing knowledge and ask questions to advance knowledge for the future. Over one-third of the
Upper School, or about 130 students, participate in the SREP where each student partners with a professional scientific laboratory
to develop their own research project. The SREP cultivates resourcefulness, technical aptitude, initiative, and communication as
students navigate the challenges of developing, presenting, documenting and disseminating their own individual research project
with an ultimate goal of empowering the student.

and Precalculus, Precalculus AB Honors, Precalculus BC Honors, Intro to Calculus, Calculus 1, AP Calculus AB, AP Calculus BC, AP
Statistics, Calculus 2 with Probability Theory Honors, Multivariable Calculus Honors, Linear Algebra Honors, Mathematical Problem
Solving
**Science Courses/Electives:** Biology, Chemistry, Physics, AP Biology, AP Chemistry, AP Physics C: Mechanics, AP Environmental Science, Topics in Human Biology, Organic Chemistry, Engineering and Design Lab

**Research Courses/Electives:** Introduction to Science Research, Science Research & Engineering Seminar

**Computer Science Courses/Electives:** Exploring Computer Science, Computer Science: Programming Interactive Media, AP Computer Science Principles, AP Computer Science A, Post-AP Computer Science Honors

**Participation in National Academic Competitions:** Mu Alpha Theta National Convention, Regeneron Science Talent Search, Intel Science and Engineering Fair, First Robotics, American Mathematics Competition, Junior Science and Humanities Symposium, American Junior Academy of Sciences

**Scholarship Awards:** $5,000,000

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**OKLAHOMA**

**Oklahoma School of Science and Mathematics at Ardmore Regional Center**

1141 N. Lincoln Blvd
OKC, OK 73104
405.521.6436

Head of school: Frank Y. H. Wang
President Frank.Wang@ossm.edu 405.522.7822

Primary contact: Suzanne Donnolo
Director of Admissions and Registrar
suzanne.donnolo@ossm.edu 405.521.6436

Website address: www.ossm.edu
Total students enrolled: 140
School structure: Comprehensive full day residential (students live on campus)

**PROGRAMS OFFERED**

**Unique Offerings:** mentorship opportunities with labs and research facilities nearby; Hefner initiative providing 2 students free trip to China

**Math Courses/Electives:** Trigonometry, Pre-Calculus, Calculus, AP Calculus AB, AP Calculus BC, Real Analysis, Differential Equations, Abstract Algebra, Special Topics in Math, Statistics (AP or other), Multivariable Calculus, Linear Algebra, Differential Equations

**Science Courses/Electives:** Biology, Chemistry, Physics, computer science

**Technology Courses/Electives:** 1 course in computer science, computer networking introduction to geosciences , Object orienting programming Data Structures

**Research Courses/Electives:** research is encouraged by not required. Roughly half of the students apply for mentorships with area labs, research facilities, etc., Summer IRSP program (Independent Research Scholars Program)

**Computer Science Courses/Electives:** Object Oriented Programming Networking Introduction to Computing Data Structures, Java

**Participation in National Academic Competitions:** Siemens Competition in Math, Science, and Technology, Intel Science Search, American Mathematics Association Competition, Chemistry Olympiad, Physics Olympiad

**Scholarship Awards:** $7.8 million
INSTITUTIONAL MEMBERS

SOUTH CAROLINA

Dutch Fork High School
1400 Old Tamah Rd.
Irmo, SC 29063

Head of school:  Dr. Gerald Gary
ggary@lexrich5.org  803.476.3300
Primary contact:  Barry Lindler
blindler@lexrich5.org  803.476.3479
Secondary contact:  Susan Elvis
STEM Coordinator
seelvis@lexrich5.org
Website address:  www.lexrich5.org/domain/3764

PROGRAMS OFFERED

Mission Statement:  The purpose of STEM is to accelerate the traditional curriculum, promote inquiry-style learning across the curriculum, develop literacy in science, technology, engineering, and mathematics. In addition we provide unique opportunities outside the classroom environment for students through independent research, internships, field studies, and respected academic competitions.

Unique Offerings:  The STEM (Science, Technology, Engineering, and Math) program at Dutch Fork High School is an honors magnet program that accelerates and enriches learning experiences for students who are academically gifted and have an interest in STEM related majors and careers.

The program began in the fall of 2005 with 17 students who were accepted based on their standardized test scores, middle school teachers’ recommendations, and interest in STEM related fields.

Since the beginning, our program has been a local answer to the national STEM initiative.  STEM accelerates the learning experience which enable students to pursue AP courses, research, and/or internships in a field of interest.  A major focus is the integration of studies across the curriculum including STEM accelerated studies in Algebra II and humanities.

The STEM curriculum is designed to accommodate each student’s interests and abilities. Upon completion of the STEM program, students are highly qualified for admission in the most rigorous and competitive university programs. Those students meeting the requirements will be recognized at graduation as STEM Scholars with Honors and receive the STEM program designation for recommendations and applications and scholarships.

Research:  STEM students are distinguished from traditional honors program through their completion of a research course. Each research project is unique and based on the student’s interest; therefore demonstrating the diversity and universal nature of STEM. STEM students begin their research during their junior year. The research courses provide students with unique opportunities to pose a research question and then design and implement an experiment. Students defend and support their results at a series of professional conferences and science fairs.

Internships:  STEM students are encouraged to participate in an internship or fellowship to prepare for research. All internships must be approved by the STEM Committee. The intern must complete at least 80 hours of work and a daily journal of duties, as well as write a reflection paper which will be submitted to the STEM Committee for review. Students are encouraged to seek these internships in the fall semester of their junior year for completion during the summer.

The Downington STEM Academy opened in the fall of 2011. The Academy is an IB World School offering every student the opportunity to earn an IB Diploma. The curriculum offers Science, Technology, Engineering and Mathematics Pathways. Students are engaged in rigorous, challenging academic work that requires a mindset of growth and effort.

PENNSYLVANIA

Downington STEM Academy
335 Manor Ave.
Downingtown, PA 19335
610.873.7620

Primary contact:  Art Campbell  Director  artcampbell@dasd.org
Website address:  www.dasd.org/STEM

The Downington STEM Academy opened in the fall of 2011. The Academy is an IB World School offering every student the opportunity to earn an IB Diploma. The curriculum offers Science, Technology, Engineering and Mathematics Pathways. Students are engaged in rigorous, challenging academic work that requires a mindset of growth and effort.
Community & Outreach: In the STEM program the students are a part of a community of learners who are involved in STEM-related field trips, participate in school events planned for STEM students, and have the opportunity to travel together to the locations such as Costa Rica and the Galapagos Islands.

Math Courses/Electives: Algebra 2 HN, Pre-Calculus HN, AP Calculus AB, AP Calculus BC, AP Statistics, Vector Calculus (USC), Elementary Differential Equations (USC)


South Carolina Governor’s School for Science and Mathematics

401 Railroad Ave.
Hartsville, SC 29550

Head of school: Dr. Hector Flores flores@gssm.k12.sc.us
Primary contact: Danny Dorsel dorsel@gssm.k12.sc.us  843.383.3900
Website address: www.scgssm.org
Total students enrolled: 288
School structure: Residential, 11th and 12th grade only (students live on campus)

PROGRAMS OFFERED

Unique Offerings: The Governor’s School for Science & Mathematics (GSSM) is one of only 12 public, residential high schools specializing in the advanced study of science, technology, engineering and mathematics in the country, and the only one located in South Carolina. Since its launch in 1988, GSSM has graduated over 1,600 alumni from every county in South Carolina, many of whom are now leaders in such critical fields as engineering, medicine, law and business. GSSM's curriculum offers 48 different STEM courses; a six-week mentored scientific or economic research program in SC, US, Europe and Asia; and national and international travel opportunities. Eighty percent of the faculty hold Ph.D.'s and 100 percent hold master's degrees. GSSM currently serves 288 11th and 12th graders.

GSSM's Center for Science Education and Outreach delivers hands-on, minds-on STEM programming and enrichment initiatives to middle and high school teachers and students across the state. Through residential camps, statewide day camps and teacher training sessions, GSSM's outreach programs reach 25,000 students and teachers in more than 100 schools statewide.

To address the shortage of in-state engineers, GSSM created Accelerate, a virtual engineering program for 10th, 11th and 12th graders to earn the first year of college credits during high school. GSSM is partnering with the state's school districts, industry leaders and top engineering colleges to deliver Accelerate. Complemented by real-world, team-based projects on weekends and summers, as well as industry internships, Accelerate is a unique and innovative approach toward addressing the needs of South Carolina's leading businesses.

GSSM is constantly working to deliver top-quality STEM education to all corners of the state.

Math Courses/Electives: Pre-Calculus, Calculus, AP Calculus AB, AP Calculus BC, AP Statistics , Multivariable Calculus, Linear Algebra, Differential Equations, Discrete Math, Abstract Algebra, Number Theory and Regression Analysis


INSTITUTIONAL MEMBERS

NCSSSS Profile and Member Directory  39
INSTITUTIONAL MEMBERS


Research Courses/Electives: 6 weeks of mentored research including a paper and presentation, on-campus Scientific Investigations


Dual Enrollment: Yes – At school, taught by college/university staff

Participation in National Academic Competitions: Zero and First Robotics, or other robotics competitions, Math modeling, Science Bowl, History Bowl, Model UN, FBLA, Academic Teams, Math Team, Youth in Government, Mock Trial, French and Spanish Honor Society

Scholarship Awards: $21.4 million

Spring Valley High School
120 Sparkleberry Lane
Columbia, SC 29229
803.699.3500 x69208

Head of school: Jeff Temoney jtemoney@richland2.org
Primary contact: Dr. Michelle Wyatt mwyatt@richland2.org 803.699.3500 x69208
Website address: www.richland2.org/svh
Total students enrolled: 320
School structure: School within a school (program open to local school district and/or to a magnet population)

PROGRAMS OFFERED

Unique Offerings: The Discovery Magnet Program is a four year, rigorous, honors/AP program designed for students with special motivation, interest, aptitude, and commitment to the study of science and math. Students focus on problem-based learning with an emphasis on both the theory and application of science and mathematics. While maintaining the normally intensive honors level courses of the traditional high school curriculum, Discovery students engage in individualized laboratory based research during their sophomore and junior years under the guidance of a school or community mentor. Many students are awarded scholarships based on their participation in these competitions, and they may move on to compete at national and international levels. These projects and competitions are completed in time for students to include this information in college and scholarship applications during their senior year.

The Explorations Magnet Program is a four year, college preparatory program designed with an emphasis on the science, mathematics, and communication skills needed to compete in the technological career areas of the future. Explorations students participate in problem-based learning, both in the classroom through a common theme of forensic science and in apprenticeship positions in their area of career interest. Students in the program are required to complete a 200-hour internship during the summer between their junior and senior year or during their senior year with a business in the community that will give them the opportunity to explore their chosen career field. During this internship, the student refines skills in communication, decision making, problem-solving, organization, and other areas pertinent to the chosen career.

Spring Valley High School was named a 2017 National Magnet School of Distinction and for both 2018 and 2019 a National Magnet School of Excellence by Magnet Schools of America, the national association for magnet and theme-based schools.


Science Courses/Electives: AP Biology, AP Chemistry, AP Physics, AP Environmental Science

Computer Science/Engineering Courses/Electives: Exploring Computer Science, AP Computer Science A (Java, Open Source/Linux, C++, Python, Ruby, Google webtoolkit, PC scheme), Introduction to Engineering, Pre-Engineering, Digital Electronics, Engineering Design and Development

Research Courses/Electives: Science Seminar, Pre-Research, Research 1, Research 2, Research 3, two years (option of three years) of independent research on student-chosen topics

Dual Enrollment: Yes – At the college/university, taught by college/university staff

Scholarship Awards: Over $24,000,000 for the Class of 2016 Magnet students

TEXAS

Academy for Careers in Engineering and Science
27310 Oak Ridge School Rd.
Conroe, TX  77385

Website address:  aces.conroeisd.net

Academy for Science & Health Professions Conroe ISD
3200 West Davis
Conroe, TX  77304

Head of school:  Dr. Mike Papadimitriou   Headmaster, ASHP   mpapadimitriou@conroeisd.net   936.709.5731
Website address:  ashp.conroeisd.net
Total students enrolled:  350
School structure:  Half-day program (students take STEM courses, then return to another school for other courses)
                   School within a school (program open to local school district and/or to a magnet population)
                   4-year program (grades 9-12)

PROGRAMS OFFERED

Unique Offerings: Scientific Research and Design Class, Explorations, Internship, Lectures, Tours and Trips, Research and Problems opportunities, mentorship


Science Courses/Electives: Biology, Chemistry, Physics, Environmental Science, Organic Chemistry, AP Chemistry, AP Physics, AP Biology

Technology Courses/Electives: Computer Science Pre-AP, AP Computer Science or other elective, Independent Study

Research Courses/Electives: Scientific Research and Design, Independent Study in Math, Independent Study in Computer Science

Computer Science Courses/Electives: Computer Science pre-AP, Java, AP Computer Science Principles, AP Computer Science A

Dual Enrollment: Yes – At school, taught by school staff

Academy of Science & Technology Conroe ISD
3701 College Park Drive
The Woodlands, TX 77384

Head of school: Dr. Susan Caffery  Headmaster  scaffery@conroeisd.net  936.709.3250
Website address: cpast.conroeisd.net
Total students enrolled: 300
School structure: School within a school (program open to local school district and/or to a magnet population)

PROGRAMS OFFERED

Unique Offerings: Scientific Research and Design Class, Explorations, Internship, Lectures, Tours and Trips, Research and Problems opportunities, mentorship
Math Courses/Electives: Algebra I, Geometry, Algebra II, Pre-Calculus, Calculus, AP Calculus AB, AP Calculus BC, Statistics
Science Courses/Electives: Biology, Chemistry, Physics, Environmental Science, AP Chemistry, AP Physics, AP Biology
Technology Courses/Electives: Computer Science Pre-AP, AP Computer Science or other elective, Independent Study
Research Courses/Electives: Scientific Research and Design, Independent Study in Math, Independent Study in Computer Science
Computer Science Courses/Electives: Computer Science pre-AP, Java
Dual Enrollment: Yes – At school, taught by school staff

Please note the following:
• AP Statistics is offered as a math course
• Organic Chemistry is offered as a science course
• Our computer science is changing. We now offer AP Computer Science Principles and AP Computer Science A.

John Jay Science and Engineering Academy
7611 Marbach Rd.
San Antonio, TX 78227
210.397.2773

Head of school: Teresa Cuellar-Hernandez  Principal  teresa.cuellar@nisd.net  210.397.2773
Website address: www.nisd.net/sciaca
Total students enrolled: 650
School structure: Comprehensive full-day (students take STEM and non-STEM courses)
School within a school (program open to local school district and/or to a magnet population)

PROGRAMS OFFERED

Unique Offerings: Students are required to take pre-AP and AP courses in all core subjects with several upper-level science courses with support/ties to local universities as well as several engineering architecture and robotics course offerings using professional software (Auto CAD, Revit, etc.) and advanced technologies (3-D printer, CNC mill, programmable robotic arm, wind tunnel, etc.) available based on career interests. All students complete at least one academic research project each year evaluated by a panel of experts in the field. Top projects go on to compete at numerous regional, state, and international science and engineering competitions. Numerous extracurricular activities including: ACE Mentor Program, Creative Writers Retreat, CyberPatriot Team, History Fair, Science Bowl, Quiz Bowl, UIL, etc.
Math Courses/Electives: Algebra I, Geometry, Algebra II, Pre-Calculus, Statistics (AP or other), AP Calculus AB, AP Calculus BC, Dual-Credit College Algebra, Dual-Credit Pre-Calculus
Science Courses/Electives: Biology, Chemistry, Physics, Environmental Science, Anatomy and Physiology, AP Biology, AP Chemistry, AP Environmental Science, Medical Microbiology, Pre- AP Physics, AP Physics B, AP Physics C: Mechanics, Pathophysiology, Science Research and Design
Research Courses/Electives: Concepts of Engineering, Science Research and Design, Independent Study Mentorship
Computer Science Courses/Electives: Java, C++
Dual Enrollment: Yes – At school, taught by school staff
On Ramps: Dual enrollment opportunities through the University of Texas at Austin
Scholarship Awards: $17,000,000

Liberal Arts and Science Academy (LASA)
7309 Lazy Creek Dr. Suite 225
Austin TX, 78724
512.414.5272

Head of school: Stacia Crescenzi Principal screscen@austinisd.org
Primary contact: Andy Paulson andy.paulson@austinisd.org
Website address: www.lasahighschool.com
Total students enrolled: 1,232
School structure: Comprehensive full-day (students take STEM and non-STEM courses)
4-year program (grades 9-12)

PROGRAMS OFFERED

Unique Offerings: A STEAM school since 2002, LASA encourages every student to take advanced courses in all academic areas. We focus on the whole student and have created four required Signature Courses. During Freshman year students take Sci Tech; an applied engineering course where they work in teams to design and build a simple machine that completes a task and E-Zine; an original course that combines newspaper experiences with graphic design skills allowing every student to be a published author by the end of the year. Sophomores take Great Ideas; an exploration of the big questions philosophers have debated for centuries and Planet Earth; a field study class where students take research questions from concept through conclusion and publication. Although best known for unique science and math offerings such as Biochemistry 1&2, Organic Chemistry, Linear Algebra and Number Theory, as well as integrative courses including Logic, Computer Programming and Digital Electronics that apply science and math skills, we also offer six World Language options through level 5 and a fine arts department that includes an orchestra that played Carnegie Hall and a theater troupe that performed productions as large as Phantom of the Opera. We pride ourselves on the fact that LASA allows all students to delve deeper in their area of interest while encouraging them to struggle academically in areas where they feel less at ease.


Technology Courses/Electives: Choice from the electives, AP Comp Sci, Computer programming, Advanced computer programming, Networking, Web Applications, Digital Electronics, Advanced Video Production

Computer Science Courses/Electives: Java, Open Source/Linux, C++, Python, Oracle
Dual Enrollment: Yes – At school, taught by school staff. At the college/university, taught by college/university staff.

Participation in National Academic Competitions: Siemens Competition in Math, Science, and Technology, Intel Science Search, American Mathematics Association Competition, Biology Olympiad, Physics Olympiad, Computational Linguistics Olympiad, First Robotics, or other robotics competitions, Quiz Bowl, Science Olympiad, iGEM

Scholarship Awards: over $33 million
School of Science and Engineering

1201 E. 8th St.
Dallas, TX 75203
972.925.5960

Head of school: Andrew Palacios  Principal  ANPALACIOS@dallasisd.org  972-925-5964
Website address: https://www.semagnet.org/
Total students enrolled: 500

PROGRAMS OFFERED

Unique Offerings: Science and Engineering Magnet (SEM) is a college preparatory public high school, which was created in 1982. The school serves 500 students in grades nine through twelve. All SEM students are required to participate in a comprehensive Pre-Advanced Placement and Advanced Placement curriculum.

The school has been named among the highest-performing high schools in the country according to national publications’ rankings (U. S. News & World Report, Newsweek, Washington Post). In 2005 & 2011, the school was named National Blue Ribbon School of Excellence by the United States Department of Education. SEM won the 2012 Intel School of Distinction Award for the Best High School Math Program in the Country.

Texas Academy of Math and Science

1155 Union Circle #305309
Denton, TX 76203
940.565.3971

Head of school: Dr. Glênisson de Oliveira  Dean of TAMS  glenisson.deoliveira@unt.edu
Primary contact: Teresa Brooks  Administrative Coordinator  teresa.brooks@unt.edu
Website address: tams.unt.edu

PROGRAMS OFFERED

Located at the University of North Texas, the Texas Academy of Mathematics and Science (TAMS) was created by the Texas Legislature in 1987 to provide an opportunity for talented students to complete their first two years of college while earning a high school diploma. Students enroll in the academy after their sophomore year of high school, live in an exclusive residence hall, and attend regular UNT courses. Their classmates are UNT undergraduate and graduate students. At the end of two years, TAMS students receive high school diplomas and approximately 60 hours of college credit. Academy graduates may stay at UNT or transfer to other universities to complete their bachelor’s degree.

SUCCESS Academy at Dixie State University - DSU
Southern Utah Center for Computer, Engineering and Science Students (SUCCESS)

225 S. 700 E. St
George, UT 84770

Head of school: John Tripp  Director/Principal  johntripp@successacademy.org
Website address: www.successacademy.org
Total students enrolled: 225

School structure: Half-day program (students take STEM courses, then return to another school for other courses)
Located on a University campus
School within a school (program open to local school district and/or to a magnet population)
3-year program (grades 10-12)
PROGRAMS OFFERED

Unique Offerings: Research Course, Computer Information Technology Cohort, Partnerships with both Washington County School District and Dixie State University, students take STEM courses of their choice on DSU Campus Senior year taught by University Professors

Math Courses/Electives: Algebra I, Algebra II, Pre-Calculus, Trigonometry, Statistics (AP or other), Calculus 1, Calculus 2

Science Courses/Electives: Biology, Chemistry, Physics

Technology Courses/Electives: Computer Tech, Computer Science, Computer Programing, Engineering

Dual Enrollment: Yes – At the college/university, taught by college/university staff

Participation in National Academic Competitions: Intel ISEF, First Robotics or other robotics, IJSHS, NCWIT, Conrad Spirit of Innovation Challenge, Intel Science Search

SUCCESS Academy at Southern Utah University - SUU Southern Utah Center for Computer, Engineering and Science Students (SUCCESS)

351 West University Boulevard
Cedar City, UT 84720

Head of school: John Tripp Director/Principal johntripp@successacademy.org 435.865.8792
Website address: www.successacademy.org
Total students enrolled: 207
School structure: Half-day program (students take STEM course, then return to another school for other courses)

PROGRAMS OFFERED

Math Courses/Electives: Algebra I, Geometry, Algebra II, Trigonometry, Pre-Calculus, Trigonometry, Statistics (AP or other), Business Math, Multivariable Calculus, Linear Algebra, Differential Equations, Discrete Math

Science Courses/Electives: Biology, Chemistry, Physics, Earth Science

Dual Enrollment: Yes – At the college/university, taught by college/university staff

Participation in National Academic Competitions: Intel Science Search, American Mathematics Association Competition Chemistry Olympiad, Computational Linguistics Olympiad

VERMONT

Essex High School

2 Educational Drive
Essex Junction, VT 05452
802.857.7213

Head of school: Robert Reardon Principal reardon@ccsvt.org
Primary contact: Lea Ann Smith STEM Academy Leader lsmith@ewsd.org
Website address: www.ewsd.org/stemacademy

PROGRAMS OFFERED

Unique Offerings: Essex High School is a public secondary school enrolling approximately 1251 students in grades 9 through 12.

The STEM Academy is designed to support students interested in building a strong foundation in the STEM content areas and providing students with the opportunity to explore connections across different disciplines through additional experiences. The Academy gives students an opportunity to explore their passion in the areas of science, technology, engineering and mathematics. Students in the Academy will engage in a self reflection and creation process that will allow them to gain insights into their interests. In addition to a rigorous experience within EHS science and math courses, students will be exposed to a broad range of opportunities in the STEM disciplines that they will synthesize into a final, culminating project. Digital age skills will be emphasized throughout the STEM experience. This program has been created in conjunction with an advisory board consisting of representatives from institutions including UVM, GlobalFoundries and Champlain College.
Academies of Loudon
41977 Loudoun Academy Drive
Leesburg, VA 20175

Head of school: Dr. Tinell L. Priddy  Principal  tinell.priddy@lcps.org
571.252.1980
Website address: www.lcps.org/aol

The mission of the Academies of Loudoun is to empower students to explore, research, collaborate, innovate, and to make meaningful contributions to the world in the fields of science, technology, engineering, and mathematics (STEM). The Academy of Engineering & Technology provides students the opportunity for deep learning in engineering, information technology, and entrepreneurship in (2) two-year curricular programs (one for 9th & 10th graders, and one for 11th & 12th graders). The Academy of Science provides a four-year curriculum experience for students to engage in mathematics, science, and research which promotes innovation, problem-solving, and collaboration. Monroe Advanced Technical Academy, a Governor’s School CTE Academy, provides significant and relevant learning in Career & Technical Education (CTE) which allows students to explore and innovate while preparing for 21st century college and careers.

PROGRAMS OFFERED
Academy of Engineering & Technology
Academy of Science
Monroe Advanced Technical Academy

Central Virginia Governor’s School for Science and Technology
3151 Wards Ferry Rd.
Lynchburg, VA 24502

Head of school: Stephen C. Smith, Ed.D.  Director
ssmith@cvgs.k12.va.us  434.477.5980
Website address: www.cvgs.k12.va.us
Total students enrolled: 132
School structure: Half-day program (students take STEM courses, then return to another school for other courses)
2-year program (grades 11-12)

PROGRAMS OFFERED
Unique Offerings: Year-long research course, 36 hour internship program, Technology Lab course
Math Courses/Electives: Pre-Calculus, Single and Multivariable Calculus, Discrete Math
Science Courses/Electives: Physics, Human Anatomy & Physiology, and Computer Science using Python
Technology Courses/Electives: Senior Seminar Technology Lab
Research Courses/Electives: Junior Research Course, Independent research opportunities (non-credit) for seniors
Dual Enrollment: Yes – At school, taught by school staff
Participation in National Academic Competitions: Intel Science Search
Scholarship Awards: Annually about 65 graduates receive offers totaling between 3 and 6 million dollars in scholarships/aid, and they are actually able to take advantage of about $2 million.

In existence since 1985, the Central Virginia Governor’s School for Science and Technology (CVGS) is a half-day program for academically gifted high school juniors and seniors. Our students are selected from ten high schools throughout our region. We offer math, science, and technology courses in the mornings, then students return to their home high schools for English, history, and electives in the afternoons. CVGS’s mission is to be a dynamic educational community exploring the connections among mathematics, science and technology and to develop leaders who possess the research and technical skills, the global perspective,
and the vision needed to address the challenges of a rapidly changing society. The curriculum is designed to provide a challenging academic program which enables students to develop independent learning strategies to ensure success in competitive four year colleges and universities and beyond.

Chesapeake Bay Governor’s School for Marine & Environmental Science
P. O. Box 1410
202 South Church Lane
Tappahannock, VA 22560

Head of school: Dr. Terri L. Perkins  Director tperkins@cbgs.k12.va.us  804.443.0267
Website address: www.cbgs.k12.va.us
Total students enrolled: 250
School structure: Half-day program (students take STEM courses, then return to another school for other courses)
3-year program (grades 10-12)

PROGRAMS OFFERED
Unique Offerings: Fall Field Studies - Trips that support the Marine & Environmental Science curriculum --Competitions: Envirothon, RCC Math Competition, Blue Crab Bowl, Virginia Junior Academy of Science --Two-Year Research Project - culminates in the Senior year with a required presentation in a conference setting
Math Courses/Electives: Algebra II, Pre-Calculus, Calculus, Statistics
Science Courses/Electives: Biology, Chemistry, Physics, Environmental Science, Marine & Environmental Science I & II; Foundations of Science
Scholarship Awards: $3.5 million

Governor’s School @ Innovation Park
10900 University Blvd
MS6D10 Discovery Hall, Room 175
Manassas, VA 20110

Head of school: Jason Calhoun  Director wcalhoun@gmu.edu  703.993.7027
Website address: governors.pwcs.edu
Total students enrolled: 116
School structure: Partial day program (students take STEM courses at GS@IP in the morning, then return to another school for other courses)
2-year program (grades 11-12)

PROGRAMS OFFERED
Unique Offerings: Courses taught at George Mason University, a location that offers unique opportunities for students to focus on real-world research experiences with possibilities for mentors from local engineering firms and scientists from the university.
Math Courses/Electives: Pre-Calculus, Honors Calculus I through III, Linear Algebra
Science Courses/Electives: Introduction to College Biology I/II, Introduction to College Chemistry I/II, College Physics I/II, University Physics I/II, Microbiology/Anatomy, Introduction to Organic and Biochemistry, Introduction to Environmental Chemistry
Technology Courses/Electives: Must take two semesters selected from: Foundations of Technology; Electrical Engineering; Multimedia Communications; Materials of Science
Engineering and Technology Courses/Electives: Introduction to Engineering, Geomatics and Engineering, Inventions and Innovations
Research Courses/Electives: Introduction to Research for Juniors, and Senior Research Year-Long experience
Dual Enrollment: Yes, through George Mason University; taught be GS@IP faculty vetted through George Mason University
Online Courses: Yes, Bioengineering course with dual enrollment credit through George Mason University
Participation in National Academic Competitions: Siemens We Can Change the World Challenge, Real World Design Challenge, American Mathematics Association Competition, National Ocean Sciences Bowl
New Horizons Governor’s School for Science and Technology
520 Butler Farm Road
Hampton, VA 23666

Head of school: Vikki Wismer  Director  vikki.wismer@nhrec.org
757.766.1100 ext: 3313

Website address: https://nhrec.org/gsst/
Total students enrolled: 180

School structure: Half-day program (students take STEM courses, then return to another school for other courses)
2-year program (grades 11-12)

PROGRAMS OFFERED

Unique Offerings: Primary goal of GSST is to provide students with an opportunity to conduct serious scientific research. All students take a junior year course in Research Methods and Ethics, which introduces research methodology, statistics, critical thinking skills, and skills of scientific writing and presentation. Senior year, students design and conduct a year-long research project under the direction of a scientific, engineering, medical or other professional in the community. The field component is supported by formal course work which guides students through the entire process, from the selection of a problem to final presentation. In addition to their outside mentor, each student is assigned a faculty advisor to assist and evaluate mentorship research.

Math Courses/Electives: Pre-Calculus, Calculus, AP Calculus AB, AP Calculus BC, Statistics (AP or other), Multivariable calculus, Linear Algebra, Differential Equations

Science Courses/Electives: Biology, Chemistry, Physics, Environmental Science

Research Courses/Electives: Research Methodology & Ethics, Research Applications / Honor Mentorship

Computer Science Courses/Electives: Scientific Programming I and II, Java, Open Source/Linux, C++

Dual Enrollment: Yes – At school, taught by school staff

Participation in National Academic Competitions: Siemens Competition in Math, Science, and Technology, Intel Science Search, American Mathematics Association Competition, Biology Olympiad, Chemistry Olympiad, Physics Olympiad, First Robotics, or other robotics competitions

Scholarship Awards: $8.5 Million

Shenandoah Valley Governor’s School
49 Hornet Rd.
Fishersville, VA 22939

Head of school: Lee Ann Whitesell  Program Director  whitesell@svgs.k12.va.us  540.245.5088

Website address: www.svgsstudentnews.wordpress.com
Total students enrolled: 225

School structure: Half-day program (students take STEM courses, then return to another school for other courses)

PROGRAMS OFFERED


Math Courses/Electives: Pre-Calculus, Calculus, AP Calculus BC, Statistics (AP or other), Multivariable Calculus, Discrete Math

Science Courses/Electives: Biology, Chemistry, Physics, Environmental Science

Technology Courses/Electives: Scientific Research or Engineering, Advanced Technology AP Computer Science Computer Software Operations/Security Geospatial Information Systems Engineering II

Research Courses/Electives: Scientific Research/Engineering

Computer Science Courses/Electives: Java

Dual Enrollment: Yes – At school, taught by school staff

Participation in National Academic Competitions: First Robotics, or other robotics competitions

Scholarship Awards: $1.2 million
Southwest Virginia Governor’s School
100 Northwood Drive
Pulaski, VA 24301

Head of school: Rebecca Phillips  Director and Biology Instructor
rphillips@swvgs.us  540.440.5510

Website address: www.swvgs.edu
Total students enrolled: 140
School structure: Half-day program (students take STEM courses, then return to another school for other courses)
2-year program (grades 11-12)

PROGRAMS OFFERED

Unique Offerings: At SWVGS, there is a focus on understanding the process of science and the use of the scientific method to reveal new knowledge. Students are required to take the Science and Technology Seminar and Project course each year they attend SWVGS and all students complete independent research projects each year. Additionally, the process of scientific discovery and the impact of significant discoveries are discussed within specific science courses. Experience with research develops critical thinking and problem solving skills, skepticism and curiosity about the world, ability to acquire and apply knowledge, joy of discovery, persistence, time management skills, a strong work ethic, and intellectual integrity, as well as collaborative, leadership, and communication skills. SWVGS leads students to solve math problems independent of a calculator. Students are encouraged to understand and practice the steps of completing calculations by hand. Development of proficiency in solving fractions, equations, factoring, etc. is a high priority. Students are asked to use mathematics to analyze data, understand scientific principles, and explore relationships among different fields of knowledge. Knowledge of basic facts and proficiency in applying basic skills allow students to understand what they are doing, make connections, and give meaningful interpretations of their results. Understanding how to use a variety of mathematical tools independent of a calculator gives students the self-confidence to think for themselves, analyze new and more complex problems, determine appropriate strategies for solving those problems, and then apply those strategies. Thinking conceptually, using logical reasoning, and making connections are skills that lead to success not only in SWVGS math and science classes, but also in college classes and in the workplace. The SWVGS compacted curriculum model is designed to challenge gifted students. Faculty members work to actively engage students in learning through demonstrations, projects, lab experiments, and group experiences. Development of problem solving and critical thinking skills are emphasized as students complete their dual-enrolled courses. Governor’s School students are part of a community of similarly motivated and talented learners. Students like the atmosphere at SWVGS and enjoy being in classrooms filled with other students who are focused on learning and achieving.

Math Courses/Electives: Calculus, Statistics is required and we teach other classes listed but not all students have to complete those if their skills are beyond those courses. Trigonometry, Business Math, Multivariable Calculus, Linear Algebra, Differential Equations

Science Courses/Electives: Biology I/II, Anatomy I/II, Biotechnology Concepts, Chemistry I/II, Environmental Science, College Physics, University Physics, Solar System and Galactic Astronomy, Technology Seminar, Human Heredity, Immunology, and Biological Problems in Contemporary Society.

Technology Courses/Electives: Science and Technology Seminar and Project 198 and 298

Research Courses/Electives: Science and Technology Seminar and Project 198 and 298

Computer Science Courses/Electives: Java, Open Source/Linux, Python

Dual Enrollment: Yes – At school, taught by school staff

Participation in National Academic Competitions: Intel Science Search, American Mathematics Association Competition, Math Kangaroo Competition

Scholarship Awards: $1,500,000
The Math & Science High School at Clover Hill
13301 Kelly Green Lane
Midlothian, VA 23112

Head of school: Sloan Burns  sloan_burns@ccpsnet.net
Website address: www.mathsci.info
Total students enrolled: 400
School structure: Comprehensive full-day (students take STEM and non-STEM courses)
School within a school (program open to local school district and/or to a magnet population)
4-year program (grades 9-12)

PROGRAMS OFFERED

Unique Offerings: Research competitions, integrated mathematics, math modeling competition, historical research, arts and aesthetics, Shakespeare productions, the curriculum of critical thinking, literary analysis

Math Courses/Electives: Geometry, Algebra II, Trigonometry, Pre-Calculus, AP Statistics, Linear Algebra, Differential Equations, AP Calculus AB and BC, advanced math modeling

Science Courses/Electives: Biology, Chemistry, AP Physics 1, Environmental Science, Field Biology, Engineering, AP Bio, AP Chem, AP Physics C, AP Environment Science, Anatomy

Technology Courses/Electives: One year of programming C++ or Java, AP Comp. Science Principles, AP Comp. Science A, DE Engineering

Research Courses/Electives: 3 years of research is required, conducted in core science, historical research, scientific research and dual enrollment biology classes

Computer Science Courses/Electives: Java, C++, AP Computer Science A, AP Computer Science Principles

Dual Enrollment: Yes – At school, taught by school staff. At school, taught by college/university staff.

Participation in National Academic Competitions: Siemens Competition in Math, Science, and Technology, Intel Science Search, American Mathematics Association Competition, First Robotics, or other robotics competitions

Scholarship Awards: $2,064,121

Thomas Jefferson High School for Science and Technology
6560 Braddock Rd.
Alexandria, VA 22312

Head of school: Ann N. Bonitatibus  a Bonitatibus@fcps.edu  703.750.8300
Primary contact: Brandon Kosatka  bkosatka@fcps.edu  703.750.8372

Website address: www.tjhsst.edu
Total students enrolled: 1,774
School structure: Comprehensive full-day (students take STEM and non-STEM courses)
4-year program (grades 9-12)

PROGRAMS OFFERED

Unique Offerings: Mentorship program, research laboratories, activities period

Math Courses/Electives: Geometry, Algebra II with Trigonometry and Data Analysis, Pre-Calculus, AP Calculus AB/BC, AP Statistics, Multivariable Calculus, Linear Algebra, Differential Equations, Advanced Mathematical Techniques, Mathematics of Finance, Complex Variables, Cryptography

INSTITUTIONAL MEMBERS


Computer Science Courses/Electives: Foundations of Computer Science (Java or Python), AP Computer Science A w/ Data Structures, Artificial Intelligence I and II (Python), Parallel Programming I and II (C), Mobile Application Development (Java), Web Application Development

Dual Enrollment: At the college/university, taught by college/university staff.

Online Courses: Credit transfer if student registers for George Mason University credit as well.

Participation in National Academic Competitions: Regeneron, American Mathematics Association Competition, Biology Olympiad, Chemistry Olympiad, Physics Olympiad, Computer Linguistics Olympiad, First Robotics, BotBall

Scholarship Awards: more than $8,000,000

WASHINGTON

Camas Math, Science, Technology Magnet Program
26900 SE 15th Street
Camas, WA 98607
360.433.5504

Head of school: Tom Morris  MST Magnet Program Principal
  tom.morris@camas.wednet.edu

Website address:  http://chsmstmagnet.com/
Total students enrolled:  120
School structure: Comprehensive full-day (students take STEM and non-STEM courses)
  Program within a school model open to local and neighboring school districts and/or to a magnet population
  4-year program (grades 9-12)

PROGRAMS OFFERED

Students work within a cohort model, traveling with the same grade-level cohort peers through scripted course offerings in grades 9-10, while grades 11-12 offer advanced topic choices from the comprehensive schedule.

Unique Offerings: Internship opportunities that include outlets for authentic, original research projects

Math Courses/Electives: Geometry, Accelerated Algebra II, Accelerated Pre-Calculus (or Pre-Calculus), AP Calculus AB/BC, AP Statistics, Multivariable Calculus

Science Courses/Electives: AP Environmental Science, AP Biology, AP Chemistry, AP Physics 1, AP Physics C

Technology Courses/Electives: Principle of Technology, Robotics, AP Computer Science A, C++

Research Courses/Electives: MST Research 9, 10, 11, & 12

Computer Science Courses/Electives: Computer Science A, C++

Dual Enrollment: Both Dual Enrollment and College in the Classroom through CWU and various local institutions of higher education.

Participation in National Academic Competitions: Science Olympiad, Biology Olympiad, Physics Olympiad, First Robotics, ISEF, Knowledge Bowl, and Envirothon

Scholarship Awards: $40,000
Western Center Academy
2345 Searl Parkway
Hemet, CA 92543
951.766.9030

Head of school: Paul Bailey  Executive Director  951-766-9030  pbailey@hemetusd.org
Contact: Michael Horton  Assistant Principal  mhorton@hemetusd.org

www.westerncenteracademy.com

Total students enrolled: 681
School structure: 6-12th grades

Western Center Academy actively engages 6th through 12th grade students in learning science, technology, engineering and mathematics to prepare them for careers in a highly technical economy. The central instructional goal, developed alongside our host museum, the Western Science Center, is to integrate a “museum discovery” based approach with the formal educational methods commonly practiced in schools. Museum discovery based learning, which is unique, experiential, active, participatory and uses real specimens to engage students in authentic science experiences guides our instruction and our hands-on STEM electives further support the mission.
York Community High School
Elmhurst Community Unit School District

162 S. York St.
Elmhurst IL 61026

Head of school: Erin DeLuga   Principal
Contact: David Beedy       STEM Coordinator   dbeedy@elmhurst205.org   630.782.6597
http://york.elmhurst205.org

York H.S. offers 26 different AP courses and 16 dual credit courses. They encourage all students to take at least one AP/ACP/Dual Credit course prior to graduation. York offers a multi-year sequence in research and digital literacy including AP Seminar and ending with AP Research to complete the AP Capstone sequence. The high school also offers multiple STEM course sequences through their Tech and Applied Arts Dept. including Fashion and Apparel, Interior Design, Culinary Arts, Industrial Technology, Transportation, Construction, Architecture, Communications, STEM, Manufacturing, Computer Science and Programming, Computer Information Systems, and Graphic Arts.

Anne Arundel County Public Schools- Central Middle School

221 Central Avenue
Edgewater, MD

Anne Arundel County Public Schools- Lindale Middle School

415 Andover Road
Linthicum, MD

Anne Arundel County Public Schools- Old Mill Middle South

620 Patriot Lane
Millersville, MD
Holy Name is a Central Catholic junior/senior high school operated by the Diocese of Worcester, Massachusetts. The school serves roughly 600 students in grades 7-12. Students are from the city itself, from 42 surrounding communities, and roughly 13% of our student body are international students. Programs Offered: Our school was founded by the Sisters of St. Anne with a goal of providing an excellent Catholic education to all who desired such a program. At Holy Name we have continued that tradition by providing a transformative, holistic educational experience to a diverse student body made up of individuals seeking to make a difference in our world. Holy Name is a rigorous college preparatory school as 100% of our graduates will go on to study at the college or university level.

Our mission is to educate dedicated students in a community of love and respect to fulfill their academic potential, to accept personal responsibility, and to use their unique gifts to bring Christ into the world. With an emphasis on authentic learning experiences, we expect our students will gain the knowledge and skills necessary to solve real-world problems. We know our graduates will ultimately improve the lives of their brothers and sisters from around the globe, thereby changing the world for the better through their work. To this end, we offer advanced and accelerated study in all core academic areas as well as having an award winning and well recognized arts program that includes visual arts, vocal music, instrumental music, dramatic theater, musical theater, and dance. Our educational programs are complemented by co-curricular activities including: athletics, the arts, social justice groups, ministry outreach groups, competitive teams such as mock trial, math team, and robotics groups. Over 85% of our student body extends their learning and growth through participation in the activities that take place beyond the school day.

Unique Offerings:
Holy Name High School and Worcester Polytechnic Institute (WPI) work together to research best practices in STEM (Science, Technology, Engineering, and Mathematics) curriculum at the high school level. The program, called the Holy Name – WPI Collaboration for Application Oriented Research, provides the opportunity for Holy Name students to engage in research programs alongside WPI students working on their Interactive Qualifying Projects (IQPs). Holy Name is also unique in that the school owns and operates its own wind turbine which has generated over 5.3 million kWhs and saved the school close to $1 million dollars in energy purchases in the eight years the turbine has been in operation. With this successful turbine, in 2017 we were able to partner with Worcester Polytechnic Institute, Vionx Energy, and National Grid on a research project evaluating the operational effectiveness of eight power storage units connected to our wind turbine and the smart grid. Although this project is in its infancy, all students at Holy Name will have their academic experience impacted by this state-of-the-art research project. In addition to our full complement of computer, applied technology, and engineering focused classes, we have recently worked with WPI to design and install a maker space for our students. The maker space, which is available to students during and beyond the school day to enhance their authentic learning, exploration, and experimentation contains: Four 3-D printers (Formlabs Form2 - a resin based SLA printer, Polar3d, Makerbot-Replicator+, FlashForge-Inventor II - All PLA/ABS filament style), 10 Arduino Kits for Basic Electronics study, 3 All-in-One HP Computers for Design work (CAD- PTC/Creo and other CAD tools), 7 Lego Robotics Kits (NXT) and 5 Lego Robotics Kits (EV3) with accompanying software (Robot-C and Lego Block based code), 5 Note Book P.C.s for driving Robotics and Electronic work, an upgrade in Robotic Wheels and a VEX Robotics Kit. All the tools and experiences will afford students a complete STEM experience from creative design, implementation, assembly and presentation.

Finally, through the work completed by our students working along with WPI students we have completely redesigned our life sciences laboratory space to include the current standard for undergraduate labs for equipment and function. Fundraising for this effort is well under way and the lab is scheduled to open in the fall of 2018.
Northbridge High School

427 Linwood Avenue
Whitinsville, MA 01588
508.234.6221

Head of school: William Bishop
www.nps.org

Unique Offerings:
Northbridge High School partners up with WSU and NASA to offer a wide variety of science opportunities for our students. Northbridge also allows students to choose a specific field of interest and enroll in career academies. In science there are the Pre-Med Academy, Engineering Academy, and Pre-Vet Academy. Science Courses Offered: Biology, Chemistry, Physics, Engineering the Future, Anatomy and Physiology, Microbiology, Pathophysiology, Biotechnology, AP Biology, AP Physics, AP Chemistry, NASA-ICED, CAD, Architecture, Botany, Zoology, and Wildlife Biology.

SOUTH CAROLINA

West Florence High School

221 N. Beltline Dr.
Florence, SC 29571
843.758.6546

Contact: Randy Jackson Assistant Principal orandal.jackson@fsd1.org
www.fsd1.org/westflorence

Total enrollment: 1,800
School structure: Comprehensive full-day
Dual enrollment: Yes, with Florence Darlington Technical College and Francis Marion University.

West Florence High School was built in 1970 to serve the Florence community. We strive to meet the learning needs of students in the classroom and beyond classroom walls. Our goal is to ensure students are prepared for their futures, are encouraged to become lifelong learners, and are introduced to cultural diversity.

TEXAS

Cesar E. Chavez High School

8501 Howard Drive
Houston, TX

Young Women’s Leadership Academy

401 E. 8th Street
Fort Worth, TX
AFFILIATE MEMBERS

CALIFORNIA
California Institute of Technology
Harvey Mudd College

COLORADO
Colorado School of Mines

FLORIDA
Florida Institute of Technology
New College of Florida
University of Miami

GEORGIA
Savannah College of Art and Design

ILLINOIS
Center for Talent Development at Northwestern University
Illinois Institute of Technology

KANSAS
Kansas State University

KENTUCKY
Center For Gifted Studies- Western Kentucky University

MASSACHUSETTS
Massachusetts Institute of Technology
Olin College of Engineering
Smith College
Wentworth Institute of Technology

MINNESOTA
Carleton College

MISSOURI
Saint Louis University
St. Louis College of Pharmacy

NEW MEXICO
Radcademy®

NEW YORK
Columbia University
Rensselaer Polytechnic Institute
University of Rochester
Utica College

NORTH CAROLINA
North Carolina State University

OHIO
Case Western Reserve University

VIRGINIA
Randolph College

UNITED KINGDOM
St. John’s College
CALIFORNIA

California Institute of Technology
383 South Hill Ave, M/C 10-90
Pasadena, CA 91125
Contact: Scott Jung  Admissions  scott@admissions.caltech.edu
www.caltech.edu

Harvey Mudd College
301 Platt Blvd
Claremont CA 91711
Head of School: Maria Klawe  President
Contact: Peter Osgood  Director of Admission  POsgood@hmc.edu  909.621.8011
www.hmc.edu
Total students enrolled: 850
School structure: Undergraduate only, 4-year degree (B.S.)

Harvey Mudd College seeks to educate engineers, scientists, and mathematicians, well versed in all of these areas and in the humanities and the social sciences so that they may assume leadership in their fields with a clear understanding of the impact of their work on society. HMC is a private, coeducational, non-sectarian, undergraduate only liberal arts college and a member of the Claremont Colleges Consortium.

Our students love math and science, want to live and learn deeply in an intimate climate of cooperation and trust (hooray, honor code). Mudders thrive on innovation and discovery, enjoy vigorous coursework and mentorship from our devoted faculty. At least a year of original, thesis driven research or participation in our Gordon Prize winning Clinic program is required (or guaranteed, if you prefer).

While we may not take ourselves too seriously, employers and graduate schools do. We enjoy a powerful reputation for preparing our graduates for various career paths and are nationally touted for our high return of investment. HMC also sends the highest proportion of graduates to PhD programs in the STEM fields of any undergraduate college in the country (second amongst all colleges and universities).

COLORADO

Colorado School of Mines
1600 Maple Street
Golden, CO 80401
Contact: Heather Boyd  Director of Enrollment Management  hboyd@mines.edu
Secondary Contact: Megan Missel  mmisel@keystonescienceschool.org
www.mines.edu
Florida Institute of Technology

150 West University Blvd.
Melbourne FL 32901
321.674.8030

Contact: Michael Perry    Director of Admission    perrymj@fit.edu
www.fit.edu

Founded as “Brevard Engineering College” in 1958, Florida Institute of Technology today is a comprehensive, research-intensive national university offering undergraduate, master's and doctoral degrees that prepare students for careers of the future. As Florida’s STEM University™, Florida Tech’s approach to academics is research-driven, high-tech and hands-on, allowing our students to both gain knowledge and get real experience in applying it. Here, you don’t just learn—you do.

New College of Florida

5800 Bay Shore Road
Sarasota, FL 34243-2109

Contact: Mitch Finer    Director of Enrollment    mfiner@ncf.edu
Secondary Contact: Sharon Alcock    Associate Director    salcock@ncf.edu
www.ncf.edu

University of Miami

Stanford Dr.
Coral Gables, FL 33124

Primary Contact: William Scott Green
Dean of Undergraduate Education
wgreen@miami.edu  305-284-2003

Website address: coe.miami.edu

The University of Miami (UM) - College of Engineering (CoE) is located on the UM Coral Gables, Fl. campus, a 230-acre suburban tract, just minutes from downtown Miami. The College is housed in the McArthur Engineering building, a 120,000-square-foot complex with state-of-the-art laboratories and facilities, which is comprised of five departments that offer BS, MS and PhD programs in Biomedical Engineering; Civil, Architectural and Environmental Engineering; Electrical and Computer Engineering; Mechanical and Aerospace Engineering; and Industrial Engineering. Accredited by the Southern Association of Colleges and Schools (SACS), UM has 12 academic units. Founded in 1947, the College of Engineering is recognized for the quality and diversity of its faculty, students and curricula and noted for educating tomorrow's technology leaders for career success.
GEORGIA

Savannah College of Art and Design
P.O. Box 2072
Savannah, GA 31402

Contact: Sarah Fedak sfedak@scad.edu
www.scad.edu and www.scad.edu/admission

SCAD offers more than 100 academic degree programs in more than 40 majors across its locations in Atlanta and Savannah, Georgia; in Hong Kong; in Lacoste, France; and online via SCAD eLearning. With a culture of collaboration, a multidisciplinary approach to education and acclaimed faculty, SCAD prepares students to become trailblazers in the fields of animation, industrial design, interactive design and game development, visual effects and more.

The innovative SCAD curriculum is enhanced by cutting-edge technology and learning resources. Visionary SCAD students have blended art, math and science to create award-winning video games and conservation-minded applications and vehicles, as well as to devise design solutions for BMW, Coca-Cola, Google, NASA and others.

Career preparation is woven into every fiber of the university: According to a recent study, 98 percent of Spring 2015 SCAD graduates were employed, pursuing further education or both within 10 months of graduation.

ILLINOIS

Center for Talent Development
at Northwestern University
617 Dartmouth
Evanston, IL 60208
847.491.3782

Contact: Paula Olszewski-Kubilius Director
p-olszewski-kubilius@northwestern.edu
Secondary Contact: Elliott Cady
elliott.cady@northwestern.edu
www.ctd.northwestern.edu

Center for Talent Development (CTD) at Northwestern University is dedicated to helping students, age 4 through grade 12, reach full potential. CTD’s research-based assessment, academic programs, and myriad resources supplement school learning. Our approach to talent development delivers personalized options and guidance for young people with high ability, setting students on a journey of intellectual, emotional, and social growth. Our accelerated and enrichment programs expand access to advanced courses, allow students to explore subjects of intrigue and connect them with a community of peers. CTD is accredited by the North Central Association Commission on Accreditation and School Improvement (NCA CASI).

Illinois Institute of Technology
10 West 35th Street
Chicago, IL 60616
312.567.5239

Contact: Toni Reilly Director Undergrad Admissions triley6@iit.edu
web.iit.edu
Illinois Institute of Technology is a private, technology-focused research university offering undergraduate and graduate degrees in engineering, science, architecture, business, design, human sciences, applied technology, and law. One of 21 institutions that comprise the Association of Independent Technological Universities (AITU), Illinois Tech offers exceptional preparation for professions that require technological sophistication, an innovative mindset, and an entrepreneurial spirit.

The Wanger Institute for Sustainable Energy Research (WISER) is home to the nation’s first functional microgrid. WISER works with students and faculty across disciplines to improve the quality of life in our nation while preserving the natural resources and the environment for future generations. State-of-the-art rapid prototyping lab, The Idea Shop, is where students transform ideas into reality with 3-D printers, 3-D scanners, CNC milling machines, a vacuum former, and a laser cutter.

It's one-part entrepreneurial center and one-part gathering place, with full-time staff dedicated to testing the limits of student imagination.

**KANSAS**

**Kansas State University**
1114 Mid-Campus Drive North
Manhattan, KS 66506

Head of School: Roger Schierecke  Asst. Dean, College of Education
coe.ksu.edu

School structure: Affiliate College

**KENTUCKY**

**Center For Gifted Studies- Western Kentucky University**
1906 College Heights BLVD. #71031
Bowling Green, KY 42101

Contact: Julia Roberts  julia.roberts@wku.edu
Secondary Contact: Tracy Inman  tracy.inman@wku.edu
www.wku.edu

**MASSACHUSETTS**

**Massachusetts Institute of Technology**
77 Massachusetts Ave. Building 3-108
Cambridge, MA 02139-4307

Contact: Stuart Schmill  Dean of Admissions  stucrew@mit.edu
Secondary Contact: Matt McGann  madmatt@mit.edu
www.mit.edu
Olin College of Engineering
1000 Olin Way
Needham, MA 02492
781.292.2222

Contact: Emily Roper-Doten  Dean of Admission and Financial Aid  Emily.Roper-Doten@olin.edu
Secondary Contact: Emily Roper-Doten  Susan Brisson  susan.brisson@olin.edu

www.olin.edu
Leading the Revolution in Engineering Education

Smith College
7 College Lane
Northampton, MA 1063

Contact: Debra Shaver  Dean of Admission  dshaver@smith.edu
Secondary Contact: Kathryn Messier  kmessier@smith.edu

www.smith.edu

Wentworth Institute of Technology
Department of Applied Mathematics
550 Huntington Ave
Boston, MA 2115

Contact: Amanda Hattaway  Department Chair & Associate Professor  hattaway@wit.edu  617.989.4368

www.wit.edu

Carleton College
100 South College Street
Northfield, MN 55057

Contact: Paul Thiboutot  VP and Dean of Admissions and Financial Aid  pthibout@carleton.edu
Secondary Contact: Adam Webster  aswebster@carleton.edu

www.carleton.edu
MISSOURI

Saint Louis University
1 North Grand Blvd
St Louis, MO 63103
Contact: William Perkins  Division of Enrollment and Retention  wperkins@stlcop.edu
www.stlcop.edu

St. Louis College of Pharmacy
4588 Parkview Place
St. Louis, MO 63110
314.446.8328
Contact: Beth Keserauskis  Vice President of Enrollment Services and Marketing
Beth.Keserauskis@stlcop.edu
Secondary Contact: Chase Davis  Director of Admissions  Chase.Davis@stlcop.edu
stlcop.edu

For more than 150 years, St. Louis College of Pharmacy has been preparing students for expert practice and leadership in pharmacy and health professions careers. With a total enrollment of nearly 1,400, the College offers a tight-knit campus community where students live and learn in a support environment.

Our location in the Washington University Medical Center, one of the nation’s preeminent biomedical complexes, provides unparalleled learning opportunities through research, internships and other hands-on learning experiences.

The College offers both undergraduate and professional degrees. Undergraduate degrees from the College prepare students for health professions careers, and they can serve as the perfect foundation for graduate or professional study. Our four-year Doctor of Pharmacy program prepares students to be leaders in innovators in the profession of pharmacy. Our graduates work in practice settings ranging from community pharmacies to biomedical research facilities.

NEW MEXICO

Radcademy®
American Society of Radiologic Technologists
15000 Central Ave. SE
Albuquerque, NM 87123-3909
800.444.2778
Contact: Greg Crutcher
ASRT Public Relations Coordinator
radcademy@asrt.org
www.asrt.org/radcademy

An initiative of the American Society of Radiologic Technologists, Radcademy® is for kids and STEM educators discovering the fascinating fields of medical imaging and radiation therapy—including x-rays, computed tomography, magnetic resonance imaging and more.
The “coolness factor” of x-ray technology is engaging a new generation of students who want to learn about its important science, technology, engineering and math principles. 

Radcademy™ is a resource for students and educators that includes:

- Website and videos.
- Unique “RADfacts” that highlight medical imaging and radiation therapy statistics.
- Mini curriculum and educational resources for middle and high school teachers, including:
  - Lesson plan, worksheet, discussion guide and quiz.
  - https://www.asrt.org/radcademy/educators/

Through our video series, teachers and kids learn about the radiologic procedures used to see inside the human body, meet the personnel who perform the procedures and discover how x-rays can diagnose and treat injuries and diseases.

**About ASRT**

The ASRT represents more than 153,000 members who perform medical imaging procedures or plan and deliver radiation therapy. The Society is the largest radiologic science association in the world. Its mission is to advance the medical imaging and radiation therapy profession and to enhance the quality of patient care.

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**NEW YORK**

**Columbia University**

212 Hamilton Hall MC 2807
1130 Amsterdam Ave
New York, NY 10027

Contact: Dana Pavarini  
Director of Engineering Recruitment  dwp2102@columbia.edu

Secondary Contact: Whitney Green  
Director of Science Recruitment  wrg2103@columbia.edu

www.columbia.edu

With landmark contributions ranging from the FM radio and the foundation of modern genetics to contemporary research such as self-aware robotics and lab-grown replacement organs, Columbia University in the City of New York has been an engine of innovation and a pioneer in technology since its founding in 1754.

Columbia offers a renowned education within the world’s most global city – a place for out-of-the-box thinkers and socially-responsible problem solvers to make an impact on a grand scale. Our 36-acre campus in Manhattan’s Upper West Side provides a traditional residential college experience to one of the most diverse, talented student bodies in the world. And a subway stop right outside the campus gates provides easy access to every corner of New York City.

Between our two undergraduate schools – Columbia College, a liberal arts college, and The Fu Foundation School of Engineering and Applied Science, more simply known as Columbia Engineering – about half of our 6,000 undergraduates major in science or engineering fields while also participating in Columbia’s famed interdisciplinary Core Curriculum. Undergraduates can conduct research at 200 affiliated institutes and centers and pursue internships with thousands of organizations around New York City and the world.

For more information about Columbia, including our generous need-based financial aid program, please visit http://undergrad.admissions.columbia.edu.
Rensselaer Polytechnic Institute
Admissions Bldg.
Troy, NY 12180-3590
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Secondary Contact: Jeanne Waugh  waughj@rpi.edu
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University of Rochester
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instagram.com/urprecollege
youtube.com/user/uradmissions

The University of Rochester is one of the country's leading private research universities. It consistently ranks among the top in federally financed science, engineering, medical, and other research. Along with this rigor, Rochester operates on a personal scale, creating exceptional opportunities for undergraduate research, close work with faculty, and interdisciplinary study. The unique Rochester Curriculum invites students to study what they love, allowing for both focus and flexibility. The University's mission is to Learn, Discover, Heal, Create—and Make the World Ever Better. Through individual endeavors and collaborative efforts, our students and faculty work toward this goal each day, improving themselves, each other, and our shared learning environment in the process.

Utica College
1600 Burrstone Rd
Utica, NY 13502
315.792.3010
Contact: John Rowe  Executive Director of Graduate Admissions  jrowe@utica.edu
www.utica.edu

Located in the heart of Central New York, Utica College is a comprehensive, independent, private institution founded in 1946. We offer many of the advantages of a large university, such as:
• undergraduate and graduate degree options,
• excellent academic programs,
• outstanding faculty
...but with an intimacy and a high degree of personal attention more closely associated with smaller private colleges.

The College offers 38 undergraduate majors and 31 minors.

The College offers 21 graduate programs, including master's degrees, doctoral programs, and graduate-level certificates. Options include:

- business administration
- cybersecurity - intelligence and forensics
- financial crime and compliance management
- education
- health care administration
- occupational therapy
- physical therapy

**NORTH CAROLINA**

**North Carolina State University**
203 Peele Hall, Box 7103
Raleigh, NC 27695-7103

Contact: Joyce Mai  
Director of Recruitment  
joyce_mai@ncsu.edu

Secondary Contact: Ronnie Chalmers  
Associate Director of Undergraduate Admissions  
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www.ncsu.edu

**OHIO**

**Case Western Reserve University**
11318 Bellflower Road  
Cleveland, OH 44106-7055

Contact: Robert R. McCullough  
Director of Undergraduate Admissions  
robert.mccullough@case.edu

Secondary Contact: Rae Ann DiBaggio  
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www.case.edu

Case Western Reserve University is a mid-sized, private research university set in campus location that is brimming with opportunity and ripe for innovation. Our 5,200 undergraduate students enter CWRU through a single door, enabling them to access coursework across our four undergraduate colleges of Arts and Sciences, Engineering, Management, and Nursing.

CWRU students engage in undergraduate experiences such as research with faculty, internships, co-operative education, clinical work, and study abroad at a very high rate. Such experiences are built into the programs, structures, and culture of the University, resulting in an outstanding record of student success.

With facilities such as think[box], a 50,000 square foot ecosystem for innovation, CWRU students apply their STEM acumen in collaboration with professors, fellow students, and the broader Cleveland community.

Case Western Reserve shares a campus with pre-eminent cultural institutions, including the Cleveland Museum of Art, Severance Hall, home to the Cleveland Orchestra, and the Cleveland Museum of Natural History. Also adjacent to our campus are three major hospital systems, including the Cleveland Clinic, consistently rated the number 2 hospital in the US. The quality and proximity of these neighboring institutions provides outstanding opportunities to elevate the CWRU student experience.
Randolph College  
2500 Rivermont Ave  
Lynchburg, VA 24503

Contact: Darlene Martin  
dmartin@randolphcollege.edu

www.randolphcollege.edu

Randolph College is committed to excellence in the liberal arts and sciences. The College’s academic program helps students build a solid foundation for their lives through broad exposure to the ideas and methods of many fields of study, as well as the depth of focus in their chosen majors. The liberal arts foster the critical thinking and creativity necessary to address the problems faced by individuals, industries and nations in the modern world.

Two grants totaling $1,600,000 from the National Science Foundation (NSF) scholarships in Science, Technology, Engineering, and Mathematics (S-STEM) program allow Randolph College to make college more accessible for physical science and math majors.

The scholarship program, “Step-Up to Physical Science and Engineering at Randolph College (SUPER),” builds on Randolph’s SUPER College Transition Program, a two-week, intensive, three-credit course that begins before first-years arrive on campus. The Summer Transition Program cost of $2750 includes 3 credits, room, board, field trip costs, and supplies, and all students accepted into the program will receive scholarships to cover this cost. The 2017 Summer Program (required of all SUPER participants) will run from August 9 to August 22. Some participants in the SUPER program will receive additional academic scholarships.

In addition to the Summer Program, all SUPER scholars will participate in specially tailored mentoring, academic support services, career guidance activities, and annual tailored seminar courses. SUPER scholars must participate in all aspects of the SUPER program and must major in science or mathematics. For more information, please contact Professor Peter Sheldon at 434-947-8488.

St. John’s College  
Cambridge | CB2 1TP

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Contact: Katerina Marmara  
Scholarship Administrator  
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+44 (0)1223 338789

Facebook: www.facebook.com/stjohnscambridge
Twitter: @stjohnscam

The University of Cambridge, founded in 1209, has a world-wide reputation for outstanding academic achievement and is consistently ranked as one of the world’s best universities. It is formed from a variety of institutions, which include 31 Colleges and more than 100 academic departments. The Colleges are governed by their own regulations, but are integral to the make-up of the University of Cambridge. All students are members of a College; this is the place where they eat, live, socialise and receive their supervisions.

St John’s College, which was founded in 1511, is one of the biggest Colleges in Cambridge and one of the most stunning places in the world for students to live and learn!

The College’s commitment is to offer a complete learning experience to its students and to enable them to make the most of their course, so as to fulfil their potential and exceed their own expectations. How is this achieved? Through endless and substantial personal attention and support!
• The supervision system, which is implemented at St John’s, allows all undergraduate students to devise a programme of study that suits their interests and needs, and arrange regular, small-group tuition sessions.
• A wealth of people offer practical support and advice to students.
• Plenty of financial initiatives are in place at St John’s, so as to ensure that students will be able to access the opportunities offered at the College, without financial worries and constraints.

Facts about St John’s:

• The student body comprises 980 students in total, both undergraduates and graduates.
• 15-20% of St John’s students come from overseas.
• Approximately 60% of undergraduate students study towards a ‘Sciences’ degree.
• Among the strongest subjects at St John’s are Natural Sciences, Maths and Engineering. The average annual intake of students for these subjects is: 30 for Natural Sciences, 15 for Maths and 15 for Engineering.
• St John’s has one of the largest College libraries in Cambridge, housing more than 105 thousands borrowable books.
• There are more than 40 clubs and societies, all run by students.
• Cambridge graduates are among the most employable in the world; 6 months after graduation, 54.9% of Cambridge graduates are in employment.
• The College’s alumni include the winners of 10 Nobel Prizes and 7 Prime Ministers!
Al Nayzak for Supportive Education and Scientific Innovation
Itha’a St. Altour Jerusalem

www.alnayzak.org

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Al Nayzak is Palestinian non-profit, non-partisan, Jerusalemite and unique initiative that looks for young talents in science, technology, engineering, and math (STEM), and plants an ambitious vision in the hearts of our community: “To develop, root, and reinforce a new culture that embraces science, and to announce this culture among Palestinian youth so that their competence in productive applied sciences could provide them with better economic opportunities that would lead to their future prosperity.”

Al Nayzak’s approach is to make scientific-thinking skills become an inherent part of the lives of Palestinian people. In order to do this, it applies empirical tools to help individuals acquire thinking skills and relate them to genuine savoir-faire and technology. In this way they become capable of facing challenges in their journey to achieve excellence and helping develop their environment and build a modern Palestinian society.

In order to achieve its mission, the organization has adopted a series of chronically conducted programs that target various age groups to incubate talented people from an early age, including Talented Students Incubators for kids and adolescents from 10 to 14; Young Researchers for those from 14 to 17; Scientific and Technological Entrepreneurship (STEP) for school students from 14 to 17; Made in Palestine (MIP) for those who are 18 and above; and “Tafkeer”, Thinking-Technology program which integrates technology in education in schools. There are also a number of complementary projects to convey a message of science and knowledge to all segments of the society.

Crowning its series of achievements and a 10 years parade for innovation, the organization inaugurated in 2013 the first Science and Technology House in Palestine, where visitors enjoy hands on activities all dedicated to create a culture of scientific thinking and as a nuclear to establishing the National Science and Technology Museum in Palestine. The Science House receives around 15 thousand visitors annually.

Al Nayzak serves all Palestinian areas through its network of offices in Jerusalem, Ramallah, Gaza, and Nablus, as well as in the Science and Technology House in the Old City of Birzeit.

Kamnoetvidya Science Academy
999 Moo 1
Payupnai, Wang Chan Valley
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www.kvis.ac.th

Primary Contact: Dr. Rachain Kosanlavit rachain.k@kvis.ac.th +66 3301 3710
Secondary Contact: Pattaraporn (Pat) Pathomyothin pattaraporn.p@kvis.ac.th
Head of School: Dr. Rachain Kosanlavit rachain.k@kvis.ac.th +66 3301 3710
Total students enrolled: 216
Kamnoetvidya Science Academy (KVIS) was founded in 2013 with the vision of being a leading science high school promoting wisdom, research, and technology for the nation’s sustainable development. The name Kamnoetvidya, which means “the genesis of knowledge,” was bestowed on the school by Her Royal Highness Princess Maha Chakri Sirindhorn.

KVIS is financially supported by the Power of Learning Foundation with an endowment fund provided by the PTT Group of Companies to ensure the sustainability, prosperity, and longevity of the academy. The school is situated in the PTT Group Research and Education Park called the Wang Chan Valley. VISTEC, a research university, and the Wang Chan Forest Learning Center are also located in this park.

KVIS is a boarding school and offers specialized curricula that emphasize mathematics, science, and technology to students from years 10 to 12. Only 72 high-ability students are admitted each year for a total student body of 216 students. All these students are on full three-year scholarships. One of the outstanding features of the school is its small-sized classrooms of 18 students. Small classes enable teachers to cater to each individual’s learning style and thus provide customized education to the students.

PROGRAMS OFFERED

High School Certificate Program in Science and Mathematics. Students are required to enroll in all courses structured by the Thai Ministry of Education. However, because Kamnoetvidya Science Academy receives students from rigorous methods of selecting students with high abilities in science and mathematics from all over the country, the school offers both fundamental and advanced courses in Mathematics, Physics, Chemistry, and Biology. Students are allowed to take advanced courses in only two disciplines during the three-year study. For example students can choose to take advanced courses in Mathematics and Physics, or Chemistry and Biology, or Mathematics and Biology etc. Even though courses like Computer Science, Earth Science, Environmental Science, and Astronomy are not major courses, students are required to take these courses as well. Even though KVIS uses English as the medium of instruction, students are still required to take courses in English Language, Social Studies, Thai Language, History, and Physical Education.

Unique Offerings: Each student is required to carry out a research project, submit a mini-thesis, and present the research work at a scientific conference before graduation. The research project can be done either singly or within a group having a maximum number of three students per research project. Apart from a tabletop Scanning Electron Microscope, UV-Visible Spectrophotometer, Fluorescence Spectrophotometer, FTIR Spectrometer, Cyclic Voltammetry, Nanoparticle Generator, Nanodrop Spectrophotometer, DNA Engine etc., KVIS students also have accesses to advanced scientific instruments at a research institution nearby, named Vidyasirimedhi Institute of Science and Technology (VISTEC). The instruments students often use are, for example, X-Ray Diffractometer, NMR, Atomic Force Microscope, and the Atomic Resolution TEM.

KVIS students are required to complete a set number of hours for community service, and physical exercises during the three-year period of study.
Programs Offered


AP Courses: AP Physics C: Mechanics, AP Physics: Electricity and Magnetism, AP Calculus BC, AP Computer Science A, AP English Language and Composition.


Science Courses/Electives: Biology (I, II, III, IV), General Chemistry, Intro to Organic Chemistry, Physics, Astronomy, Physics Olympics, Chemistry Olympics, Biology Olympics.


Research Courses/Electives: Critical Thinking, Junior Research, Senior Research.

Computer Science Courses/Electives: Scratch, Python, C++.

Dual Enrollment: No


Scholarship Awards: 70% of total student body receive full scholarships

Philippine Science High School Main Campus
Agham Road
Diliman Quezon City Philippines 1101

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Mission

The Philippine Science High School, operating under a unified structure of executive committees, provides scholarships to secondary students with high aptitude in science and mathematics.

The PSHS offers an education that is humanistic in spirit, global in perspective, and patriotic in orientation. It is based on a curriculum that emphasizes science and mathematics as well as the development of well-rounded individuals.

The PSHS prepares its students for careers in Science and Technology and contributes to nation building by helping the country attain a critical mass of professionals and leaders in different fields.

Vision

We are a leading science high school in the Asia Pacific Region preparing our scholars to become globally competitive Filipino scientists equipped with 21st century skills and imbued with the core values of truth, excellence, and service to nation.
Qatar Foundation STEM School
Qatar Foundation
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