

NORTH CAROLINA SCHOOL OF SCIENCE AND MATHEMATICS

2010-2011
PROFILE



30 YEARS OF TRANSFORMING LEARNERS, DEVELOPING LEADERS

ABOUT THE NORTH CAROLINA SCHOOL OF SCIENCE AND MATHEMATICS

The North Carolina School of Science and Mathematics is a public, residential, coeducational high school for juniors and seniors with high intellectual ability and commitment to scholarship. It was established by the North Carolina General Assembly in 1978 to provide challenging educational opportunities for students with special interests and potential in the sciences and mathematics.

NCSSM opened in September 1980 with its first class of 150 juniors, a sample of the many talented and highly motivated students in North Carolina. With a student body that equally represents North Carolina's 13 congressional

districts, students vary in their backgrounds yet are similar in their motivation to achieve academically and in their determination to prepare for professional careers and positions of leadership.

In July 2007, NCSSM became the 17th constituent institution of the University of North Carolina system. The School is accredited by AdvancED — Southern Association of Colleges and Schools Council on Accreditation and School Improvement. NCSSM is a founding partner of the 210-member National Consortium for Specialized Secondary Schools of Mathematics, Science and Technology.

STUDENT SELECTION

Students interested in applying to NCSSM must be in their sophomore year of high school and their parent/legal guardian must maintain residency in North Carolina. Students are selected during their 10th-grade year through a competitive process that considers each applicant's interest in science and mathematics, and includes a review of standardized test scores, past academic performance, special talents, accomplishments and extracurricular interests. Students' essays and their current school's assessment of student characteristics also help present a complete picture of each candidate.

The application process is highly competitive although there are a limited number of enrollment spaces (approximately 340 per class). NCSSM is legislatively mandated to enroll an equal percentage of students from each of the state's 13 congressional districts. Students

applying to NCSSM's program compete for enrollment with other students within their congressional district rather than competing with every applicant from across the state. This assures that applicants with access to the same community resources are competing with one another.

Organized to make recommendations on the enrollment of candidates, the Admissions Selection Committee includes technological and educational leaders from across our state, along with NCSSM faculty and staff members. The Selection Committee examines each student's accomplishments and looks for evidence of potential, particularly in science and mathematics. In order to assure NCSSM the benefits of a diversified student body, the committee also considers extenuating circumstances, geographic and other demographic variables in its review process.

Currently, 680 11th- and 12th-grade students from across North Carolina live and learn at NCSSM.

DEMOGRAPHICS: CLASS OF 2010

Ethnicity	Frequency	Percent
African American/Black	34	10.5%
Asian or Pacific Islander	76	23.4%
Caucasian	209	64.3%
Hispanic	4	1.2%
Native American	2	0.6%
Total	325	100%

Gender	Frequency	Percent
Female	175	53.8%
Male	150	46.2%
Total	325	100%

SCHOLARSHIP

Fifty-seven NCSSM students, from the 28 graduating classes since the school's inception, have won the Morehead-Cain Scholarship at UNC-Chapel Hill. Forty-three students have been named Park Scholars from N.C. State University since the program began 15 years ago.



INSTRUCTIONAL PROGRAM

The instructional program at NCSSM takes advantage of a residential learning environment, a well-trained and dedicated staff, and a highly motivated and talented student body, to provide a unique learning experience for each student. The School's philosophy is to ensure that each student obtains a thorough grounding in the sciences, mathematics, language arts, history, and a foreign language; that each becomes proficient in the use of computers, laboratory facilities, and other means by which knowledge is acquired and processed in the sciences and mathematics; and that each adopts a sequence of study that includes investigating areas of academic interest in depth through high level course offerings and such activities as mentorship, research courses, independent studies, seminars, directed group studies, and Mini-Term.

Students in the Class of 2010 were typically enrolled in four to five courses per trimester as juniors and five courses per trimester as seniors, all of which were taken during their two years at NCSSM. These include the following minimal requirements of trimester credits earned:

6 Science, 5 Mathematics, 4 English, 2 Social Science, 3-6 Foreign Language (varies with competency), 1 Physical Activity & Wellness, plus sufficient electives to equal the required number of credits.

Each student must also successfully complete two years of Mini-Term, two years of campus work service, a community service project and the Student Life 101 and 201 courses.

In addition to meeting core graduation requirements, students participate in a number of elective academic programs. The curriculum includes extensive opportunities in art and music. There are opportunities to participate in selected online courses offered through NCSSM Online. NCSSM also has exchange programs with schools in Germany, Italy and Japan.

NCSSM graduates are prepared for learning successfully in a collegiate environment. Throughout the curriculum, they are expected to develop their independent investigative skills, solve novel problems, function as leaders and followers on project teams, and appreciate the learning advantages that a diverse community offers. This extensive access to each other and their teachers allows learning to carry on well after the class day ends.

The readiness of NCSSM students for college is also enhanced by articulation agreements with universities. These agreements award university credit for courses taken at NCSSM without a requirement for an Advanced Placement Exam or other placement or exemption testing. There are articulation agreements in place with the following universities: East Carolina University, North Carolina A&T University, North Carolina Central University, North Carolina State University, University of North Carolina at Greensboro and Oglethorpe University in Atlanta. Negotiations are underway to establish agreement with other institutions including more members of the North Carolina University System.

In the Class of 2010, students sat for AP exams in Biology, Calculus AB, Calculus BC, Chemistry, Chinese Language

and Culture, Computer Science A, Computer Science AB, Economics: Macroeconomics / Microeconomics, English Language and Composition, English Literature and Composition, Environmental Science, European History, French Language, French Literature, Government & Politics: Comparative, Government & Politics: United States, Human Geography, Latin: Literature, Latin: Vergil, Music Theory, Physics B, Physics C: Electricity and Magnetism, Physics C: Mechanics, Psychology, Spanish Language, Spanish Literature, Statistics, United States History, and World History.

STUDENT LIFE PROGRAM

The Student Life Division provides the nurturing setting for the holistic development of every student. The residential environment increases the depth and breadth of all students' experiences as they take advantage of the rich opportunities and support which are available within the NCSSM community. The Counseling Services Department provides personal, academic, college and career counseling and instruction to all juniors on study skills and time management. The Physical Activity and Wellness Department offers a wide variety of core and elective courses including resistance training, Sports Medicine I & II, self-defense, archery and fencing; an eighteen sport interscholastic program, an intramural program with more than 90 percent participation, and many recreational opportunities.

SERVICE LEARNING

Requirements:

- Sixty hours of service learning in North Carolina
- Three hours a week of work service at NCSSM

Beyond expectations:

- The Class of 2010 logged more than **22,000 hours of service**
- Students averaged nearly **72 hours of service**
- Students worked with **306 service organizations** across North Carolina during the summer of 2009.
- Student-led NCSSM Food Drive collected and delivered **319,990 pounds of food, or 269,465 meals**, to the Food Bank of Central and Eastern North Carolina

The Residential Life Department offers instruction for a graduation required Student Life 101 course that addresses topics on community building, diversity, alcohol and drugs, sexual issues, public speaking, leadership and interviewing skills.

Through the Student Services Department, students are required to perform 60 hours of service learning for a non-profit agency in North Carolina before their senior year. In 2008, students averaged nearly 74 hours, with students logging more than 24,000 total hours. Each student is also required to perform three hours of work service for a departmental area including cafeteria, grounds or in a leadership capacity such as Residential Life Assistant, Student Ambassador, Peer College Counselor, Multicultural Peer Counselor, Development Attache and Student Government.

EVALUATION

Students at NCSSM are evaluated at the end of each trimester and are given letter grades. Although NCSSM assigns quality points to courses and calculates grade point

averages, students are not ranked. This GPA system has been implemented solely to help describe each student's performance and course selections as part of the process of applying to schools and programs outside of NCSSM.

QUALITY POINTS AND GPA

The Quality Point value of courses is reflected in the NCSSM course numbering system:

QUALITY POINTS AWARDED BY LETTER GRADE

COURSE #	DESCRIPTION	QUALITY POINTS AWARDED BY LETTER GRADE			
		A+ / A / A-	B+ / B / B-	C+ / C / C-	D
300 - 349	Introductory level courses that meet a core NCSSM graduation requirement (comparable to honors level courses at many high schools)	5.0	4.0	3.0	0.0
350 - 399	Meet one or more of the following criteria: <ul style="list-style-type: none"> accelerated versions of classes at the 300 – 349 level courses that require prerequisites taken at NCSSM courses at a level higher than a typical high school honors course courses that are for seniors only 	5.5	4.5	3.5	0.0
400 - 449	Courses at the level of introductory college courses and/or that help prepare students to take an Advanced Placement examination	6.0	5.0	4.0	0.0
450 - 499	Courses that deal with topics beyond those of introductory college courses	6.0	5.0	4.0	0.0

All NCSSM courses are at the honors level or higher. Mini-Term, physical activity courses, Student Life courses, Work Service and Community Service are graduation requirements. These courses, however, along with Special Study Options, carry no quality points and are not computed in the GPA.

CLASS OF 2010 STATISTICS

STANDARDIZED TEST PERFORMANCE

Scholastic Aptitude Test
314 students

	VERBAL	MATH	TOTAL
MEAN:	675	704	1379
MEDIAN:	680	700	1380

SAT statistics were compiled using the best verbal and best math scores reported for each student. At the time of admission, the Class of 2009 had a mean combined score of 1286 and a median combined score of 1270.

NATIONAL MERIT PERFORMANCE

National Merit and
National Achievement

National Merit Finalists: 59

National Achievement Finalists: 7

The merit status is based on the PSAT, which students take in October of their junior year.

ADVANCED PLACEMENT EXAMINATIONS

**245 students took 679 examinations.
91% scored a 3, 4 or 5.**

score:	5	4	3	2	1
% of scores:	41	29	21	6	3

81% of the graduates took at least one exam

FINAL GRADES

A - Outstanding	54.9%
B - Superior, meets all course requirements	37.8%
C - Acceptable, minimally meets course requirements	7.2%
D - Unsatisfactory, no NCSSM credit	0.1%

Of the 304 students who graduated, 15 (4.9%) had all A's during their junior and senior years.

NCSSM ONLINE

NCSSM launched in August 2008 a virtual learning program, NCSSM Online. This two-year program serves students from across North Carolina. The students in this program attend their local high school and supplement their academic program with NCSSM curriculum and residential experiences. The NCSSM online courses are complemented with weekly real-time web conferencing sessions. A unique component of the program is the hosting of several onsite residential weekends during the year, allowing students to work side-by-side with their peers under the leadership of their NCSSM instructor. A weeklong summer residential student symposium is offered to rising seniors of the NCSSM Online program. A transcript and complete profile are provided to students who are enrolled in this program. Students admitted into NCSSM Online program must meet the same admissions standards as the residential program. Students can either apply directly to the online program for admission or apply to the residential program and later be screened for the online program once the residential admission process has been completed.

STUDENT RESEARCH

Recognizing the importance of technical and problem-solving skills and the increasing demand for research learning opportunities among our students, NCSSM offers a variety of options for focused research. For students with limited previous research involvement, Research Experience courses provide research skills development and the opportunity to complete a comprehensive research project in science, humanities, mathematics, or computer science

MENTORSHIP

Mentorship offers students the opportunity to work in an off-campus lab or other real world setting under the guidance of a research professional at an area university or in a Research Triangle Park lab.

ADVANCED RESEARCH

More advanced courses in a specific scientific discipline — Research in Biology, Chemistry, Computational Science or Physics — are for students who want to initiate or continue an in-depth research project of their own design. Students can earn a research credential in Mathematics by successfully completing an advanced sequence in Statistics or Mathematical Modeling. Numerous students also participate in summer research programs on campus or in the Triangle area and/or enter their work

in state or national competitions. Each spring NCSSM showcases its student research programs in a Research Symposium, at which students present the results of their research activities through oral and/or poster presentations to the NCSSM community and invited guests.

MINI-TERM

For seven days in early spring, regular classes are suspended to permit all students the opportunity either to take a specialized mini-course arranged by one or more faculty members or to pursue an approved academic project of the student's own design. Topics range from in-depth lab or computer studies to extended art or science trips. The results of each project are presented to the community.

RESEARCH, COMPETITION & AWARDS

The Class of 2010 was well-represented in international, national and regional high school science competitions, winning first place national awards in the National Science Bowl Competition, as well as awards at the International Science and Engineering Fair, Siemens Competition, Singapore Mathematics Challenge, Intel Science Talent Search, Stockholm Junior Water Prize, and many more. Since 2000 NCSSM has had more Siemens Competition semifinalists and winners than any other school, having won the national competition three times.

STUDENT CLUBS

NCSSM students are encouraged to participate in extra-curricular activities including student clubs. The school has more than 90 clubs, including those that are academic, physical, social and service related. Some of the clubs at NCSSM include: Health Occupations Students of America (HOSA), YMCA Youth and Government, Ethical Awareness Group, Fencing Club, Swimming Club, French Cultures Club, The Garden Club and NCSSiMprov.

ATHLETICS

NCSSM offers a wide-range of intramural athletic opportunities for students, including volleyball, basketball, soccer and ultimate Frisbee, with more than 90% of students participating. Students may also participate in the 18 varsity sports the school offers. Since 2006, NCSSM has won team North Carolina High School Athletic Association State Championships in Men's Cross Country, Men's Track and Field, Women's Tennis, Men's Soccer and Men's Tennis.

NCSSM ADMINISTRATION

J. Todd Roberts
Chancellor

Richard Alston
Chief Information Officer

Joan D. Barber
Vice Chancellor
for Student Life

Katie Collini
Internal Auditor

Gail Faulkner Hudson
Dean of Counseling Services

Ed McBride
Vice Chancellor for Operations

Natasha Nazareth-Phelps
General Counsel

Melissa Thibault
Vice Chancellor
for Distance Education
and Extended Programs

Katie Wagstaff
Executive Director
of NCSSM Foundation

Steve Warshaw
Vice Chancellor for
Academic Programs

T. Brock Winslow
Vice Chancellor for
Institutional Advancement

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COLLEGE ACCEPTANCES & ENROLLMENTS FOR THE CLASSES OF 2006 THROUGH 2010

A = Accepted :: E = Enrolled

	A	E		A	E		A	E
Agnes Scott College	3	0	Ithaca College	2	1	Tulane University	39	3
Alaska-Pacific University	2	0	James Madison University	2	0	Tusculum College	1	0
Albion College	1	0	Johns Hopkins University	41	2	Tuskegee University	2	0
Allegheny College	1	0	Johnson & Wales University	2	0	UNC-Asheville	67	22
American University	8	0	Juniata College	1	0	UNC-Chapel Hill	921	640
Amherst University	7	0	Kenyon College	4	0	UNC-Charlotte	49	11
Appalachian State University	76	19	Kettering University	5	1	UNC-Greensboro	43	8
Arizona State University	4	3	Knox College	1	0	UNC-Pembroke	7	1
Auburn University	5	3	Lees-McCrae College	6	1	UNC-Wilmington	97	26
Australia National University	1	0	Lehigh University	2	1	United States Air Force Academy	5	3
Ball State University	1	0	Lenoir-Rhyne College	3	0	United States Coast Guard Academy	2	1
Bard College	6	0	LeTourneau University	1	1	United States Military Academy	3	2
Barnard University	4	1	Liberty University	2	1	United States Naval Academy	7	5
Barton College	1	0	Loyola University	4	0	Unity College	1	0
Baylor University	5	1	Macalester College	9	2	University of Akron	1	0
Bellarmino University	1	0	Marquette University	2	0	University Of Alabama At Huntsville	1	0
Belmont University	2	1	Mary Baldwin College	3	0	University Of Alabama At Tuscaloosa	1	0
Beloit College	4	0	Maryville College	2	0	University of Alberta, Canada	1	0
Bentley College	1	0	McGill University, Canada	3	0	University of Arizona	1	0
Binghamton University	2	0	Mercer University	9	0	University of British Columbia	1	0
Boston College	7	0	Meredith College	10	4	University Of California Berkeley	13	3
Boston University	15	1	Methodist College	1	0	University Of California Los Angeles	12	5
Brandeis University	8	1	Michigan State University	5	0	University Of California San Diego	3	0
Brenau University	2	0	Middlebury College	1	0	University of Central Florida	2	0
Brigham Young University	2	1	Millsaps College	1	0	University Of Colorado	36	7
Brown University	20	3	Mississippi State University	1	0	University of Colorado, Boulder	4	0
Bryn Mawr College	6	1	MIT	69	19	University of Colorado, Denver	2	0
Bucknell University	2	1	Morehouse College	8	4	University of Connecticut	3	0
Cabrini College	1	0	Mount Holyoke College	5	1	University of Delaware	2	1
California Institute Of Technology	33	10	Mount Olive College	1	0	University of Edinburgh	1	1
Campbell University	32	6	New College Of South Florida	12	0	University of Florida	7	0
Carleton College	3	0	New York University	41	7	University of Georgia	7	2
Carnegie-Mellon University	24	3	Norfolk State University	3	0	University of Illinois at Chicago	1	0
Case Western Reserve University	10	1	North Carolina A & T	22	7	University of Illinois at Urbana	8	1
Catholic University of America	1	0	North Carolina Central University	31	8	University of Kentucky	2	0
Champlain College	2	2	North Carolina State University	765	342	University of Maryland Baltimore County	15	4
Charleston Southern University	1	0	North Dakota State University	1	0	University of Maryland, College Park	10	0
Chowan College	4	0	Northeastern University	8	1	University of Melbourne	5	0
Cincinnati Christian University	1	0	Northland College	2	0	University of Miami	9	1
Claremont McKenna College	1	1	Northwestern University	21	1	University of Michigan	10	0
Clark University	1	0	Oberlin College	14	5	University of Nebraska-Lincoln	3	0
Clemson University	27	4	Occidental College	1	0	University of Nevada at Las Vegas	1	0
College of Charleston	15	2	Oglethorpe University	9	1	University of New Hampshire	1	0
College of William & Mary	25	3	Ohio State	8	2	University of New Haven	2	0
Colorado School of the Mines	4	0	Ohio Wesleyan University	2	0	University of Notre Dame	8	0
Colorado State University	1	1	Old Dominion University	1	0	University of Oklahoma	1	1
Columbia University	31	7	Olin College of Engineering	7	2	University of Pennsylvania	35	9
Converse College	2	0	Oxford College of Emory University	4	0	University of Pittsburgh	3	0
Cooper Union	6	2	Pace University	1	1	University of Richmond	6	1
Cornell College	8	0	Pacific University	1	0	University of Rochester	4	1
Cornell University	44	9	Peace College	3	0	University of San Francisco	1	0
Dartmouth College	18	4	Pennsylvania State University	9	1	University Of South Carolina	5	2
Davidson College	65	12	Pfeiffer University	1	0	University of Southern California	5	0
Defiance College	1	0	Pomona College	5	0	University of St. Andrews, Scotland	2	0
DePauw University	2	0	Pratt Institute	1	0	University of St. Thomas	1	0
Dickerson College	5	0	Princeton University	71	9	University of Tampa	2	0
Drexel University	32	1	Purdue University	8	0	University of Tennessee	11	0
Duke University	260	68	Queens College	4	0	University of Texas	3	0
Earlham University	1	0	Queens University Canada	1	0	University of the South	6	0
East Carolina University	132	35	Quinnipiac College	1	0	University of Tulsa	1	0
Eckerd College	3	0	Randolph-Macon College	9	0	University of Vermont	2	0
Elizabeth City State	4	0	Reed College	9	0	University of Virginia	1	0
Elon University	26	2	Rensselaer Polytechnic Institute	10	0	University of Virginia	25	0
Embry-Riddle	4	1	Rhodes College	4	0	University of Washington - Seattle	2	1
Emory and Henry	1	0	Rice University	17	3	University of Wisconsin-Madison	4	1
Emory University	30	4	Roanoke College	2	0	Ursinus College	3	0
Erskine College	1	0	Rochester Institute of Technology	5	0	Utica College	1	0
Evergreen State University	1	0	Rose Hulman Institute Of Technology	12	3	Valparaiso University	1	0
Fayetteville State University	3	1	Rutgers University	4	1	Vance-Granville Community College	1	0
Florida A & M University	7	0	Salem College	3	0	Vanderbilt University	36	3
Florida Institute of Technology	9	1	Sarah Lawrence University	3	1	Vassar College	9	2
Florida State University	4	0	Savannah School of Design	2	1	Virginia Commonwealth University	16	0
Franklin & Marshall College	2	0	Scripps College	1	0	Virginia Military Institute	1	0
Furman University	17	2	Shaw University	1	0	Virginia Polytechnic Institute	32	3
Gardner-Webb University	6	1	Shimer College	1	0	Wake Forest University	106	20
George Mason University	1	2	Smith College	4	1	Warren Wilson College	5	0
George Washington University	15	2	Spelman College	3	0	Washington & Jefferson College	1	0
Georgetown University	15	2	St. John's College, Annapolis	2	0	Washington & Lee University	13	1
Georgia Institute of Technology	57	8	St. John's University (New York)	3	0	Washington University-St. Louis	32	3
Gonzaga University	1	0	St. Louis University	1	0	Webb Institute	1	0
Grinnell College	4	1	St. Mary's College of Massachusetts	1	0	Wellesley College	18	2
Grove City College	1	0	St. Vincent's College	1	0	Wells College	3	0
Guilford College	13	0	Stanford University	41	7	Wesleyan University	8	0
Hampden-Sydney College	13	2	Stephens College	1	0	West Virginia University	4	1
Hampshire College	6	0	Stetson University	1	0	Western Carolina	37	4
Hampton University	7	0	Stevens Institute of Technology	4	2	Westminster College	2	0
Harvard University	63	5	Swarthmore College	14	3	Wheaton College	7	1
Harvey-Mudd College	9	2	Sweet Briar College	3	0	Williams College	6	1
Haverford College	14	3	Syracuse University	1	0	Wingate College	31	0
Hawaii Pacific University	2	0	Temple University	4	0	Winston Salem State University	7	4
High Point University	4	1	Tennessee State University	1	0	Winthrop University	1	0
Hiram College	1	1	Texas A & M University	4	0	Wittenberg University	1	0
Hofstra University	1	0	Texas Christian College	2	0	Wofford College	13	1
Hollins University	5	1	Texas Tech	1	0	Worcester Polytechnic Institute	3	0
Howard University	18	0	The Citadel	2	1	World Harvest Bible College	1	1
Illinois Institute of Technology	2	0	The University of Edinburgh	2	0	Xavier University	12	0
Indiana University of Bloomington	2	0	Trinity College	1	0	Yale University	66	17
Iowa State University	2	0	Tufts University	3	1			

TOTALS

4,826 1,525