



NORTH CAROLINA SCHOOL OF SCIENCE AND MATHEMATICS



2011-2012
PROFILE



32 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 because there are a limited number of enrollment spaces (approximately 340 per class). NCSSM is legislatively mandated to enroll a roughly 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 2011

Ethnicity	Frequency	Percent
African American/Black	50	15.1%
Asian or Pacific Islander	84	25.4%
Caucasian	178	53.8%
Hispanic/Latino	93	28.1%
American Indian	3	0.9%
Other	10	3%
Two or More Races	6	1.8%

Gender	Frequency	Percent
Female	154	46.9%
Male	174	53.1%
Total	328	100%

SCHOLARSHIP

Sixty-three NCSSM students, from the 30 graduating classes since the school's inception, have won the Morehead-Cain Scholarship at UNC-Chapel Hill. Fifty 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 world 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 2011 were typically enrolled in four to five core academic 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 World 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 and Italy.

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: Appalachian State University, East Carolina University, Meredith College, North Carolina A&T University, North Carolina Central University, North Carolina State University, Oglethorpe University, University of North Carolina at Greensboro and University of North Carolina at Pembroke. Negotiations are underway to establish agreement with other institutions including more members of the University of North Carolina System.

In the Class of 2011, 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 2011 logged more than **21,000 hours of service**
- Students averaged nearly **72 hours of service**
- Students worked with **hundreds of service organizations** across North Carolina during the summer of 2010.
- Student-led NCSSM Food Drive collected and delivered **559,885 pounds of food, setting a Guinness World Record**, 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 2010, students averaged nearly 74 hours, with students logging more than 21,000 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 2011 STATISTICS

STANDARDIZED TEST PERFORMANCE

Scholastic Aptitude Test
329 students

	VERBAL	MATH	TOTAL
MEAN:	660	701	1361
MEDIAN:	660	700	1360

SAT statistics were compiled using the best verbal and best math scores reported for each student. At the time of admission, the Class of 2011 had a mean combined score of 1277 and a median combined score of 1270.

NATIONAL MERIT PERFORMANCE

National Merit and
National Achievement

National Merit Finalists: 44

National Achievement Finalists: 9

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

ADVANCED PLACEMENT EXAMINATIONS

**217 students took 575 examinations.
96% scored a 3, 4 or 5.**

score:	5	4	3	2	1
% of scores:	55	24	17	3	1

81% of the graduates took at least one exam

FINAL GRADES

A - Outstanding	51.9%
B - Superior, meets all course requirements	40.8%
C - Acceptable, minimally meets course requirements	7.1%
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, Mathematics or Physics — are for students who want to initiate or continue an in-depth research project of their own design. Students can also 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 2011 was well-represented in international, national and regional high school science competitions, winning 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. For a full list of clubs, visit: www.ncssm.edu/sg/index.php/clubs

ATHLETICS

NCSSM offers a wide-range of intramural athletic opportunities for students, including volleyball, basketball, soccer and ultimate Frisbee, with more than 85% 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

Jesh Humphrey
Chief Legal Counsel

Melissa Thibault
Vice Chancellor
for Distance Education
and Extended Programs

Katie Wagstaff
Executive Director
of NCSSM Foundation

Steve Warshaw
Vice Chancellor for
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COLLEGE ACCEPTANCES & ENROLLMENTS FOR THE CLASSES OF 2007 THROUGH 2011

A = Accepted :: E = Enrolled

	A	E		A	E		A	E
Agnes Scott College	5	0	Illinois Institute of Technology	1	0	Trinity College	1	0
Alaska-Pacific University	1	0	Indiana University of Bloomington	2	0	Tufts University	1	0
Allegheny College	1	0	Iowa State University	2	0	Tulane University	47	2
American University	16	3	Ithaca College	2	1	Tusculum College	1	0
Amherst University	8	0	James Madison University	2	0	Tuskegee University	2	0
Appalachian State University	85	22	Johns Hopkins University	40	1	Union College	1	0
Arizona State University	4	3	Johnson & Wales University	2	0	United States Air Force Academy	4	1
Auburn University	9	3	Juniata College	1	0	United States Coast Guard Academy	1	1
Australia National University	1	0	Kenyon College	2	0	United States Military Academy	7	4
Bard College	4	0	Kettering University	5	1	United States Naval Academy	6	4
Barnard University	4	2	Knox College	1	0	Unity College	1	0
Bary College	1	0	La Tierra University	1	0	University of Puget Sound	1	0
Barton College	1	0	Lafayette College	2	0	University of Akron	1	0
Baylor University	4	1	Lees-McCrae College	4	1	University Of Alabama At Huntsville	1	0
Bellarmine University	1	0	Lehigh University	2	1	University Of Alabama At Tuscaloosa	1	0
Belmont University	2	1	Lenoir-Rhyne College	3	0	University of Arizona	1	0
Beloit College	3	0	Letourneau University	1	1	University of British Columbia	1	0
Bentley College	1	0	Liberty University	2	1	University Of California - Berkeley	17	4
Binghamton University	1	0	Louisiana State University	1	0	University of California - Davis	2	1
Birmingham-Southern College	1	0	Loyola University	5	0	University Of California Los Angeles	14	4
Boston College	8	0	Macalester College	9	2	University Of California San Diego	7	0
Boston University	20	3	Marquette University	4	0	University Of California Santa Barbara	1	0
Brandeis University	8	1	Mary Baldwin College	2	0	University of Central Florida	2	0
Brenau University	2	0	Massachusetts Institute of Technology	62	20	University Of Chicago	8	8
Brigham Young University	3	1	McGill University, Canada	2	0	University of Colorado, Boulder	3	0
Brown University	19	3	Mercer University	5	0	University of Colorado, Denver	1	0
Bryn Mawr College	7	1	Meredith College	7	3	University of Connecticut	2	0
California Institute Of Technology	35	10	Methodist College	1	1	University of Delaware	3	1
Campbell University	43	9	Miami University: Oxford, Ohio	1	0	University of Florida	7	0
Carleton College	4	0	Michigan State University	4	0	University of Georgia	7	2
Carnegie-Mellon University	27	4	Middlebury College	1	0	University of Hawaii at Manoa	1	0
Carson-Newman	1	0	Millsaps College	1	0	University of Illinois at Chicago	2	0
Case Western Reserve University	9	1	Morehouse College	10	2	University of Illinois at Urbana	7	2
Catholic University of America	1	0	Mount Holyoke College	3	0	University of Iowa	1	0
Centre College	3	0	Mount Olive College	1	0	University of Kentucky	2	0
Chapman University	2	0	New College of South Florida	8	1	University of Louisville	1	0
Charleston Southern University	1	0	New York University	52	6	University of Maryland Baltimore County	14	4
Chowan College	4	0	Norfolk State University	1	0	University of Maryland, College Park	9	0
Christopher Newport University	1	0	North Carolina A & T	19	8	University of Massachusetts - Amherst	1	0
Cincinnati Christian University	1	0	North Carolina Central University	35	6	University of Massachusetts - Boston	1	0
Claremont McKenna College	1	1	North Carolina State University	867	342	University of Melbourne	5	0
Clark University	1	0	Northeastern University	9	1	University of Miami	16	2
Clemson University	43	5	Northwestern University	20	1	University of Michigan	8	1
Colby College	1	0	Oberlin College	14	5	University of Missouri at Kansas City	2	1
College of Charleston	18	2	Oglethorpe University	15	1	University of Nebraska-Lincoln	2	0
College of William & Mary	26	3	Ohio State	11	2	University of New Haven	2	0
Colorado School of the Mines	4	0	Ohio Wesleyan University	2	0	University of North Carolina - Charlotte	54	10
Colorado State University	1	1	Oklahoma City University	1	0	University of North Carolina - Asheville	61	19
Columbia University	40	12	Oxford College of Emory University	7	0	University of North Carolina - Chapel Hill	928	632
Converse College	2	0	Pace University	2	1	University of North Carolina - Greensboro	43	9
Cooper Union	5	2	Pacific University	1	0	University of North Carolina - Pembroke	2	1
Cornell College	8	0	Peace College	4	0	University of North Carolina - Wilmington	96	26
Cornell University	41	10	Pennsylvania State University	10	1	University of Notre Dame	8	1
Covenant College	1	0	Pomona College	2	0	University of Oklahoma	2	1
Dartmouth College	17	3	Pratt Institute	1	0	University of Pennsylvania	38	11
Davidson College	62	8	Princeton University	72	10	University of Pittsburgh	4	0
Defiance College	1	0	Purdue University	6	0	University of Puget Sound	1	0
DePaul University	1	0	Queens College	3	0	University of Rochester	7	1
Dickerson College	4	0	Queens University Charlotte	2	1	University of San Diego	3	1
Drexel University	48	1	Quinnipiac College	1	0	University of South Carolina	1	0
Duke University	265	73	Randolph-Macon College	11	1	University of Southern California	9	2
Earlham University	1	0	Reed College	4	0	University of Tennessee	12	3
East Carolina University	139	35	Regent University	1	0	University of Texas	2	0
Eckerd College	3	0	Rensselaer Polytechnic Institute	11	1	University of Texas at Dallas	3	1
Elizabeth City State	4	0	Rhodes College	6	1	University of The South	5	1
Elon University	28	3	Rice University	18	2	University of Vermont	2	0
Embry-Riddle	3	1	Ringling College of Art and Design	1	0	University of Virginia	23	1
Emerson College	1	0	Roanoke College	2	0	University of Washington - Seattle	2	1
Emory and Henry	1	0	Rochester Institute of Technology	6	2	University of Wisconsin-Madison	1	0
Emory University	41	4	Rose Hulman Institute Of Technology	10	2	Ursinus College	2	0
Fayetteville State University	3	1	Rutgers University	1	1	Vanderbilt University	35	2
Florida A & M University	6	1	Salem College	4	0	Vassar College	6	1
Florida Institute of Technology	8	1	Sarah Lawrence University	2	1	Villanova University	2	0
Florida State University	4	0	Savannah School of Design	4	1	Virginia Commonwealth University	6	0
Fordham University	1	0	Scripps College	1	0	Virginia Polytechnic Institute	34	3
Franklin W. Olin College of Engineering	5	2	Seattle Pacific University	1	1	Virginia Union University	1	0
Franklin University	16	4	Shaw University	1	0	Wake Forest University	133	26
Gardner-Webb University	5	1	Shimer College	1	0	Warren Wilson College	3	0
George Fox University	1	0	Smith College	3	1	Washington & Jefferson College	1	0
George Mason University	2	2	Southwestern University	1	0	Washington & Lee University	4	1
George Washington University	22	3	Spelman College	4	0	Washington University-St. Louis	32	2
Georgetown University	19	5	St. John's College, Annapolis	2	0	Wellesley College	14	2
Georgia Institute of Technology	71	13	St. John's University (New York)	6	0	Wells College	3	0
Gonzaga University	1	0	St. Mary's College of Maryland	1	0	Wesleyan University	5	0
Grinnell College	3	1	Stanford University	43	9	West Virginia University	2	0
Grove City College	1	0	State Univer. N.Y. College of Env. Sci & Forestry	1	0	Western Carolina	43	4
Guilford College	9	0	Stephens College	1	0	Westminster College	1	0
Hampden-Sydney College	13	2	Stevens Institute of Technology	2	2	Wheaton College	3	0
Hampshire College	4	0	Swarthmore College	13	3	Williamette University	1	0
Hampton University	5	0	Sweet Briar College	2	0	Williams College	8	3
Harvard University	60	7	Syracuse University	1	0	Wingate College	51	1
Harvey-Mudd College	9	4	Temple University	1	0	Winston Salem State University	6	3
Haverford College	10	3	Texas A & M University	4	0	Wofford College	9	2
Hawaii Pacific University	2	0	Texas Christian College	1	0	Worcester Polytechnic Institute	1	0
High Point University	6	1	The Citadel	3	3	Xavier University	1	0
Hiram College	2	1	The Kings' College	1	1	Yale University	61	18
Hollins University	4	1	The University of Edinburgh	1	0			
Howard University	13	1	Transylvania College	1	1			