U.S. Department of Education
2018 National Blue Ribbon Schools Program

[X] Public or [ ] Non-public

For Public Schools only: (Check all that apply) [ ] Title I   [ ] Charter   [X] Magnet   [X] Choice

Name of Principal Mrs. Jamisa Williams
(Specify: Ms., Miss, Mrs., Dr., Mr., etc.) (As it should appear in the official records)

Official School Name The STEM Early College at N.C. A&T
(As it should appear in the official records)

School Mailing Address 402 Laurel Street Smith Hall Room 004
(If address is P.O. Box, also include street address.)

Greensboro   NC   27411-0001
City   State   Zip Code+4 (9 digits total)

County Guilford

Telephone (336) 370-8580   Fax (336) 274-7167

Web site/URL
https://www.gcsnc.com/STEM_Early_College_at_NC_AT   E-mail williaj7@gcsnc.com

I have reviewed the information in this application, including the eligibility requirements on page 2 (Part I-Eligibility Certification), and certify, to the best of my knowledge, that it is accurate.

_____Date_____
(Principal's Signature)

Name of Superintendent*Dr. Sharon Contreras
(Specify: Ms., Miss, Mrs., Dr., Mr., Other)   E-mail contres@gcsnc.com

District Name Guilford County Schools   Tel.   (336) 370-8100
I have reviewed the information in this application, including the eligibility requirements on page 2 (Part I-Eligibility Certification), and certify, to the best of my knowledge, that it is accurate.

_____Date_____
(Superintendent's Signature)

Name of School Board
President/Chairperson Mr. Alan Duncan
(Specify: Ms., Miss, Mrs., Dr., Mr., Other)

I have reviewed the information in this application, including the eligibility requirements on page 2 (Part I-Eligibility Certification), and certify, to the best of my knowledge, that it is accurate.

_____Date_____
(School Board President's/Chairperson's Signature)

The original signed cover sheet only should be converted to a PDF file and uploaded via the online portal.

*Non-public Schools: If the information requested is not applicable, write N/A in the space.

Part I – Eligibility Certification

The signatures on the first page of this application (cover page) certify that each of the statements below, concerning the school's eligibility and compliance with U.S. Department of Education and National Blue Ribbon Schools requirements, are true and correct.

1. The school configuration includes one or more of grades K-12. (Schools on the same campus with one principal, even a K-12 school, must apply as an entire school.)

2. All nominated public schools must meet the state's performance targets in reading (or English language arts) and mathematics and other academic indicators (i.e., attendance rate and graduation rate), for the all students group and all subgroups, including having participation rates of at least 95 percent using the most recent accountability results available for nomination.

3. To meet final eligibility, all nominated public schools must be certified by states prior to September 2018 in order to meet all eligibility requirements. Any status appeals must be resolved at least two weeks before the awards ceremony for the school to receive the award.

4. If the school includes grades 7 or higher, the school must have foreign language as a part of its curriculum.

5. The school has been in existence for five full years, that is, from at least September 2012 and each tested grade must have been part of the school for the past three years.

6. The nominated school has not received the National Blue Ribbon Schools award in the past five years: 2013, 2014, 2015, 2016, or 2017.

7. The nominated school has no history of testing irregularities, nor have charges of irregularities been brought against the school at the time of nomination. The U.S. Department of Education reserves the right to disqualify a school's application and/or rescind a school's award if irregularities are later discovered and proven by the state.

8. The nominated school has not been identified by the state as "persistently dangerous" within the last two years.

9. The nominated school or district is not refusing Office of Civil Rights (OCR) access to information necessary to investigate a civil rights complaint or to conduct a district-wide compliance review.

10. The OCR has not issued a violation letter of findings to the school district concluding that the nominated school or the district as a whole has violated one or more of the civil rights statutes. A violation letter of findings will not be considered outstanding if OCR has accepted a corrective action plan from the district to remedy the violation.

11. The U.S. Department of Justice does not have a pending suit alleging that the nominated school or the school district as a whole has violated one or more of the civil rights statutes or the Constitution's equal protection clause.

12. There are no findings of violations of the Individuals with Disabilities Education Act in a U.S. Department of Education monitoring report that apply to the school or school district in question; or if there are such findings, the state or district has corrected, or agreed to correct, the findings.

PART II - DEMOGRAPHIC DATA

Data should be provided for the most recent school year (2017-2018) unless otherwise stated.

DISTRICT

1. Number of schools in the district   <u>69</u> Elementary schools (includes K-8)
   (per district designation):   <u>22</u> Middle/Junior high schools
                                  <u>28</u> High schools
                                  <u>0</u> K-12 schools

                                  <u>119</u> TOTAL

SCHOOL (To be completed by all schools)

2. Category that best describes the area where the school is located:

[X] Urban or large central city
[ ] Suburban
[ ] Rural or small city/town

3. Number of students as of October 1, 2017 enrolled at each grade level or its equivalent in applying school:

Grade	# of Males	# of Females	Grade Total
PreK	0	0	0
K	0	0	0
1	0	0	0
2	0	0	0
3	0	0	0
4	0	0	0
5	0	0	0
6	0	0	0
7	0	0	0
8	0	0	0
9	21	25	46
10	25	18	43
11	21	25	46
12 or higher	27	23	50
Total Students	94	91	185

4.   Racial/ethnic composition of   0 % American Indian or Alaska Native
     the school: 23 % Asian
                                          43 % Black or African American
                                           7 % Hispanic or Latino
                                           0 % Native Hawaiian or Other Pacific Islander
                                          21 % White
                                           6 % Two or more races
                                      100 % Total

(Only these seven standard categories should be used to report the racial/ethnic composition of your school. The Final Guidance on Maintaining, Collecting, and Reporting Racial and Ethnic Data to the U.S. Department of Education published in the October 19, 2007 *Federal Register* provides definitions for each of the seven categories.)

5.   Student turnover, or mobility rate, during the 2016 – 2017 school year: <01%

If the mobility rate is above 15%, please explain.

This rate should be calculated using the grid below. The answer to (6) is the mobility rate.

Steps For Determining Mobility Rate	**Answer**
(1) Number of students who transferred *to* the school after October 1, 2016 until the end of the 2016-2017 school year	0
(2) Number of students who transferred *from* the school after October 1, 2016 until the end of the 2016-2017 school year	1
(3) Total of all transferred students [sum of rows (1) and (2)]	1
(4) Total number of students in the school as of October 1, 2016	188
(5) Total transferred students in row (3) divided by total students in row (4)	<.01
(6) Amount in row (5) multiplied by 100	<01

6.   English Language Learners (ELL) in the school: 0 %
                                              0 Total number ELL

Specify each non-English language represented in the school (separate languages by commas):

7.   Students eligible for free/reduced-priced meals: 0 %
         Total number students who qualify: 0

8. Students receiving special education services: 0 %
                                                       0 Total number of students served

Indicate below the number of students with disabilities according to conditions designated in the Individuals with Disabilities Education Act. Do not add additional conditions. It is possible that students may be classified in more than one condition.

0 Autism	0 Multiple Disabilities
0 Deafness	0 Orthopedic Impairment
0 Deaf-Blindness	0 Other Health Impaired
0 Developmentally Delayed	0 Specific Learning Disability
0 Emotional Disturbance	0 Speech or Language Impairment
0 Hearing Impairment	0 Traumatic Brain Injury
0 Intellectual Disability	0 Visual Impairment Including Blindness

9. Number of years the principal has been in her/his position at this school: 3

10. Use Full-Time Equivalents (FTEs), rounded to nearest whole numeral, to indicate the number of school staff in each of the categories below:

	Number of Staff
Administrators	1
Classroom teachers including those teaching high school specialty subjects, e.g., third grade teacher, history teacher, algebra teacher.	9
Resource teachers/specialists/coaches e.g., reading specialist, science coach, special education teacher, technology specialist, art teacher, etc.	2
Paraprofessionals under the supervision of a professional supporting single, group, or classroom students.	1
Student support personnel e.g., guidance counselors, behavior interventionists, mental/physical health service providers, psychologists, family engagement liaisons, career/college attainment coaches, etc.	1

11. Average student-classroom teacher ratio, that is, the number of students in the school divided by the FTE of classroom teachers, e.g., 22:1   17:1

12. Show daily student attendance rates. Only high schools need to supply yearly graduation rates.

Required Information	2016-2017	2015-2016	2014-2015	2013-2014	2012-2013
Daily student attendance	99%	93%	93%	0%	0%
High school graduation rate	100%	100%	0%	0%	0%

13. **For high schools only, that is, schools ending in grade 12 or higher.**
    Show percentages to indicate the post-secondary status of students who graduated in Spring 2017.

Post-Secondary Status	
Graduating class size	43
Enrolled in a 4-year college or university	100%
Enrolled in a community college	0%
Enrolled in career/technical training program	0%
Found employment	0%
Joined the military or other public service	0%
Other	0%

14. Indicate whether your school has previously received a National Blue Ribbon Schools award.
    Yes ___   No X

    If yes, select the year in which your school received the award.

15. In a couple of sentences, provide the school's mission or vision statement.

The STEM Early College at N.C. will provide an interdisciplinary approach using critical thinking to solve real world issues in a STEM problem-based, learning environment.

16. **For public schools only**, if the school is a magnet, charter, or choice school, explain how students are chosen to attend.

STEM Early College (STEM EC) is a choice school in Guilford County Schools. Each year our school receives hundreds of applications and the Data Manager will check-in all applications for completion (using the application checklist) and file them alphabetically. At the conclusion of the school district timeline for returning applications, STEM EC teachers will use the staff adopted score sheet to begin blind scoring applications. The process begins with all teachers blind scoring the applications using the score sheet. Teachers must score and initial a minimum of 60 applications. All applications must be scored twice; however, a third score is required if initial two scorers have a difference of more than four points. Applications scored twice should be moved to a separate box that indicates that they have been scored twice. Principal will randomly select a minimum of 85 scored applications to verify scoring process and fair scoring for completed applications. Based on numerical scores, a range will be set that is inclusive of a minimum of 75 applicants who will be invited in for an interview. Principal will work with front office staff to notify families about their upcoming interview for acceptance. Front office staff will compile interview score and original application score to chronologically select the top fifty students. Students that are not in the top fifty, but were interviewed, will be placed in the Waiting Pool. All applicants (selected and wait pooled) will be notified of acceptance status by phone and mail from front office staff and GCS reassignment office, respectively.

PART III – SUMMARY

STEM Early College at NC A&T was founded in 2012 designed to serve highly motivated, high-performing students with an interest in science, technology, engineering and math. The former superintendent and university Chancellor saw an opportunity to create an educational experience for students seeking deeper knowledge in STEM careers. The original design is sustained as we accept 50 freshmen each year by application rubric; NC A&T honors a Memorandum of Understanding that give public school high school student access to university amenities.

STEM Early College at N.C. A&T educates students from all over the county, and its diverse population fosters acceptance and inclusion. In the 2017-2018 school year the demographics at the STEM EC were 43% Black, 23% Asian, 21% White, 8% Hispanic, and 5% Multiracial. Because students who attend our school are selected from various middle schools within Guilford County, they have different levels of social and educational exposure. Guilford County Schools is home to 73,000 students; it is the third largest in North Carolina and the 47th largest in the United States. The district demographics represent over 144 countries with 57% free and reduced lunch. Situated within this large district are over 10, 134 special education students and 13, 000 advanced learners. Our school demographic mirrors this description. We are home to students who tested into high performing magnet schools or those who came from low performing middle schools within our district; however, the commonality, despite their free and reduced lunch status or middle school background, is that they are all part of the 13,000 advanced learners who managed to take an upper level math (math I) in the eighth grade.

While we are still young, our school has established cultural traditions. Each year we honor the tradition of being involved in the North Carolina Agricultural and Technical State University homecoming events such as the parade, football game, tailgating, and spirit week. Our school culture has fostered a fall/winter tradition of a winter ball, open mic expression forum, and STEM café. During the spring each year we have multi-cultural fair for our vast array of families, take our sophomore class on a college tour of various STEM-based universities, support our seniors during college decision day, host a test-stress detox for our Advanced Placement students, and have a host of senior activities. A milestone for our school during the 2017-18 school year is to graduate our first original cohort of 50 students with over $9.5 million in scholarships.

It is our goal to make sure we are challenging all students to reach their full potential. Our school and surrounding community have evolved into a champion environment of smart failure, growth mindset, and grit. Our community incorporates programming that develops students' character and intellect. We are focused on attending to the emotional needs of students and fostering the development of their personal and social skills by implementing regular classroom guidance with the school counselor addressing issues of stress, organization, time-management, as well as encouraging student participation in Service-Learning projects.

Our intentional focus on character education and Service-Learning for the past five years has grown to involve students, parents, staff and the community so that everyone feels heard and shares solutions. We share leadership in showing commitment to our value statements, which includes, "creating an environment where students, teachers, parents, and stakeholders will take pride in the school and engage in activities beyond the classroom." We have created a trend of reflection by participating in "grit" sessions this year, in which staff members read Angela Duckworth's Grit and the School Leadership Team developed strategies to help students understand that "smart failure" happens and that grit will help students understand that failure is a learning experience. Student and school support (if failure happens) takes the form of the Student Support Team in which a team of faculty member provide prescriptive services for student success. Long-range support in our school's development includes incorporating an Advanced Placement Capstone project into our curriculum programming and developing a senior internship initiative in which students acquire real-world experience in the community. Our school regularly provides several character education opportunities in our academic environment and afterschool clubs, allowing multiple opportunities for student leadership. Each year we have more and more students wanting to attend our school district's Service-Learning Ambassador Saturday training.

Each year our school features a new character education theme that has the students and parents asking questions such as how can they get the new "grit" shirts the teachers are wearing and how can the PTSA help recognize students who exhibit the character trait of the month. Now the school strives to incorporate community programming that develops students' character. We attend additional community events such as the university's job fair, so the students can feel encouraged to be more goal-oriented for the future. We take pride in our evolving school culture as we develop traditions such as the multicultural fair, and STEM cafe. We are not only proud that our inaugural graduating class was recognized at our district's Cool to Serve celebration for having the highest percentage of seniors earning Service-Learning awards in 2016, but we are now at 2017-2018 State School of Character. Our intentional focus on character education and Service-Learning for the past five years has grown to involve students, parents, staff and the community so that everyone feels heard, everyone can share solutions, and everyone understands our mission posted throughout our school: to provide an interdisciplinary approach using critical thinking to solve real-world issues in a STEM problem-based, learning environment.

PART IV – CURRICULUM AND INSTRUCTION

1. Core Curriculum:

At The STEM Early College at N.C. A&T, we provide our students with an interdisciplinary approach to using critical thinking to solve real world issues in a STEM problem-based, learning environment. We integrate character education and service learning into the STEM-based core curriculum by engaging students in experiences that teach them how to solve tomorrow's challenges today. The STEM Early College values civic learning as a core component of the school. Extracurricular activities and classrooms work diligently to provide opportunities for students to experience moral thought, action, and discourse. Civic learning and engagement also take place within the classroom as teachers plan lessons that require students to apply content standards to real-world problems related to the environment, politics, and the implications of population, food, and distribution of wealth; students engage in discussions about moral and ethical implications of charity, providing for others, and common aid. While there are many isolated events that occur in and out of the classroom regarding civic learning, students use this as a springboard for service learning. Students in all grade levels participate in service learning opportunities and many seek out opportunities on their own. By incorporating civic and service learning, along with a focus on moral action, into extracurricular and classroom events, students at STEM graduate with more than the Guilford County Schools (GCS) required hours to obtain a Service Learning diploma or award.

The course content, scope, and sequence aligns with the "early college" design for Guilford County Schools which entails two years of high school and two full years of college. The career pathways that students and families self-select are prescriptive to the student's interest in STEM careers. Ultimately, the high school courses develop the student's academic and civic readiness to navigate the college courses and the social-cognitive aspects of college. Next, the college career pathways provide students an opportunity to explore their career interests and makes them nationally and internationally competitive with both high school and college students in STEM education.

Students begin work on a North Carolina approved rigorous course of study in the ninth grade preparing them for dual-enrollment in college courses during their junior and senior years. In the ninth grade, students take the following core courses: Honors Biology, Honors Chemistry, Honors English I and II, and Honors Civics and Economics. For math, they take the following courses depending on their math readiness level: Honors Math II, Honors, Math III, and Honors Pre-Calculus. Our tenth graders take AP Environmental Science, AP United States History, AP English Language and Composition, AP Calculus AB/BC, AP Seminar, and Honors English III, and Honors Multicultural Literature. During the 2018-2019 school year, our students will have the option to pursue an Advanced Placement Capstone diploma by taking AP Research during the eleventh grade year. Our eleventh and twelfth graders take up to 12 credit hours of college courses aligned to a specific career pathway: Biomedical Sciences, Renewable and Sustainable Energy, Engineering, and Information Technology. The core curriculum for the college courses includes a wide range of science, technology, engineering, math, humanities, and social sciences classes that meet our students' diverse readiness levels and interests. Because of their selected pathway and cross articulation of college courses and state Career and Technical Education (CTE) courses, students may earn CTE concentrator status with diploma endorsement and/or industry certifications.

The eleventh and twelfth grade students take college level elective courses that are specific to the career pathway that they have chosen. The curriculum for the Engineering and Renewable and Sustainable Energy pathway exposes students to a variety of courses that cultivates their analytical thinking and problem solving skills applicable to the engineering design process. Students on the Biomedical Sciences pathway experience elective courses that are designed to develop their awareness of the human, societal, economic, and political factors that will impact the work of medical practitioners and researchers. The Information Technology curriculum is designed to equip students with industry credentials and certifications that acknowledge career readiness skills when they graduate high school. While our dual enrollment program is thematically centered on STEM careers, we recognize the value in the arts and humanities curriculum. Based on their dual enrolled career pathway choice, students gain daily exposure to the essential skills in their chosen pathway.

Students who are selected to attend STEM Early College showcase sufficient, solid, and superior command of foundational skills in reading, math, science, and social studies as indicated by the 8th grade North Carolina Final exams and End-of-Course standardized assessments. While all of our students enter STEM Early College with a strong academic foundation, such as Math I (the North Carolina Graduation Requirement), we intentionally work to ensure that we equip students with the foundational skills needed for success as they matriculate to college as dual-enrolled and traditional students. An active example is vertical-articulation of high school and college calculus course curriculum, pedagogy, and pacing. A second example is our AP course offerings and curriculum; each course exposes students to college-level thinking, reading, and writing.

2. Other Curriculum Areas:

Most of our students are high-achievers who experience their first B (which they equate to failure) during the first semester of their freshmen year at The STEM Early College. Our faculty is tasked with equipping our students with the essential skills and knowledge that will help them handle the stressors associated with the academic demands of the program and the expectations of parents, teachers, and self. Our Health/Physical Education curriculum is aligned with the North Carolina Standard Course of Study, which is designed to teach students to plan effective stress management strategies, to establish healthy and effective interpersonal communication skills and relationships, and to apply lifelong nutrition and health-related fitness behaviors to a balanced lifestyle.

To prepare our students for career readiness, we offer courses aligned with the North Carolina Career and Technical Education (CTE) course of study. Our Project Management course introduces students to the framework of initiating, planning, executing, monitoring and controlling, and closing a project in an authentic situation.

Our eleventh and twelfth graders have the opportunity to take college courses related to art, theater, creative writing, and music. These college courses include: Creative Writing, Photojournalism, Music Appreciation, History of Jazz, Speech Communications, Theatre for Non-majors, and Drawing. The virtual learning experience that we offer our ninth and tenth graders provides our students with more course curriculum selections that students elect to take such as Music Appreciation, Psychology, Entrepreneurship, and Microsoft Applications. Due to the accelerated nature of our program, our students take their foreign language through the virtual learning program of the school district, state, and/or local contract. Although the students do not get the benefit of a face-to-face learning environment for foreign language, the virtual learning approach to teaching foreign language provides our students with more course options that meet their specific foreign language interests. Our students take Spanish, French, German, Japanese, Chinese, Arabic, Russian, and Latin, to name a few.

The STEM Early College at N.C. A&T has adopted a school-wide character education program to create a successful thriving and caring school community. A function of the program is to integrate 21st century soft skills, such as cooperative learning activities that promote the engineering design process. Extra-curricular clubs also complete a service learning project. The character education curriculum engages students in opportunities to develop their civic responsibility. The Service Learning Ambassador Club leads the school's character education and service learning initiatives by informing the school community of the multiple opportunities to create a community of care. Many students participate in the National Conference for Community and Justice (NCCJ) Anyday program which introduces students to the ideas of social justice, inclusion, and diversity. Additionally, students initiate and implement service learning projects that align to the core curriculum and addresses the social needs of the community. For example, our Project Management class planned and implemented a school-wide project which brought awareness to the impact of homelessness on our school community and also provided essential resources to those in need. The Multicultural Literature teacher has created a partnership with the language exchange program in Maldova which increases students' understanding and acceptance of other cultures and also improves their foreign language skills.

Our school community of care has ignited our students' response to national and global incidents of crisis. The students sponsored a drive to collect water and non-perishables to send to the victims of Hurricane

Harvey. In response to the school shooting in Parkland, FL, our students organized a student walkout to not only memorialize the one-month anniversary of the mass shooting, but to promote activism against gun violence.

3. Instructional Methods, Interventions, and Assessments:

STEM Early College students will emerge from the dual-enrolled program with the skills and expertise to become the designed thinkers of the next generation. Our instructional approach to increasing design thinking and an innovative spirit is the use of the engineering design process cross all classrooms. With this process, teachers support students to define the problem, gather information, generate multiple solutions, test the solution, implement the solution, and iterate the process. The engineering design process requires that collaboration is both disposition and skill to achieve the desired outcome. Individual student needs are met as the design process involves the solicitation of feedback from a diverse set of stakeholders within the school; this instructional approach in inclusive of differentiated instruction and problem based learning. Technology based support includes one to one technology for students. An Instructional Technology Specialist aids in teacher and student support while increasing knowledge on technology in the classroom, software support, and effective device utilization.

The school has purchased Naviance, a program that allows students, administrators, and staff to interact with a variety of modules that can be geared toward college and career development with focus on creating a tracking and accountability system to ensure students are meeting their goals. Naviance also provides an additional method for students and parents to connect to the school and to develop a culture of academic and character excellence.

STEM also provides opportunities for support across all classes through our Student Support Team. This team works with students who are at risk academically, emotionally, or behaviorally to provide resources and additional guidance toward success. The Student Support Team works with staff members in all grades to provide early detection for students and to develop plans to increase individual student academic and character-based success. Students may be referred by a teacher or administrator due to a demonstrated need, but students may also choose to take part if they feel they need additional support. The Student Support Team encourages students to behave with honesty and integrity within their classes but also within their meetings with staff. These students serve as guides to what other students may need as well. It is also a core value of STEM to promote and recognize ethical and character-based behavior amongst students.

STEM Early College is a North Carolina public high school that requires all students to take the North Carolina Accountability System Standardized Tests (End of Course Test, North Carolina Final Exam, ACT, ACT WorkKeys). The assessment data is used publicly with the North Carolina School Report Card. Within the school, we use the assessment data to identify trends, gaps, and drive the school improvement plans. For example, data from the 2016-2017 school year in English II indicated that there was a gap between the percentage of student scoring a level 4 (solid command) and level 5 (superior command). Our goal is to increases students' growth in English II from level 4 to level 5. Likewise, a goal of the school is to maintain our achievement status with pass rates of greater than 95% on these standardized assessments. Our Advanced Placement school score summary indicates a pass rate of 48.5 percent in 2015, 56.6 percent in 2016, and 68.1 percent in 2017. With an increase in pass rate of 19.6% in two years, our school now exceeds the global percentage pass rate; however, our school sees the need for continuous improvement in this area. We attack AP scores as a school-wide need and it is addressed in the school improvement plan. In the spring of 2017, the Environmental Club and PTSA worked together to sponsor an event known as the AP Blitz. During this event, individual students were given binders and instructions to complete a set of assignments across their AP courses. Those assignments were kept in the binder and used as AP review in the weeks leading up to the exams. This event encouraged students to not only be organized with their work but to purposefully practice content for the AP Exam. There were approximately 18 students who completed the review, and of those 18, five earned AP scholar recognition or distinction and 13 received a 3 or higher on at least one AP exam. This process of intervention yielded positive outcomes for the 2016-2017 AP results, and we have adopted this process for the 2017-2018 AP review period.

While our school does not have a glaring achievement gap, we are consistently focused on school improvement. School improvement includes character education and service learning to increase student

activism in pursuing academic goals. Teachers are involved in professional development and have conversations to plan and execute high quality instruction in every classroom, every day.

1. **School Climate/Culture:**

STEM Early College is a magnet school with nearly 200 students and 12 faculty members. It takes each person to create positive and supportive environment. In order to bring students together as a family from across the district, it begins with an individualized welcome note from the principal. The data that supports our positive environment is the lack of data. Our school community supports a positive environment with various activities such as the NCCJ Anyday opportunity in 2017 that encouraged students to embrace human relations issues in a supported environment.

Next, our school of advanced learners require a challenging curriculum, so students are prepared to meet district and national exam requirements, and can apply curriculum to college and career situations. Our school establishes a climate and culture of safety and acceptance, where risks are highly supported, open and genuine discussions are essential, positive character traits are nurtured, and service learning is the norm. For example, at the STEM Early College students participate collaboratively in a Capstone Research experience to answer a clarifying question such as "how can students positively impact the community through the implementation of innovative solutions to local problems?" The Capstone experience is part of the daily sophomore curriculum where students meet for at least one hour to address a community problem. Students are engaged and motivated by Capstone because they may choose their topics of interest, which have ranged from homelessness to organic hair products. The Stanford University's Design Thinking process informed our Capstone learning experience and process for students to empathize, define, ideate, prototype, and test a solution to the problem.

culture of engagement and motivation is also fostered in teachers. Visions are inspired and cultivated to benefit both teachers and students. Leadership opportunities are abundant which fosters more responsibility and professional growth. All teachers sponsor a club or organization, eighty percent of the teachers are a part of the School Improvement Team, and currently more than half of our teachers have lead district level and community professional development. Anecdotal feedback indicates that parents and students hold teachers in high regard based on their innovative instructional practices. Teachers exhibit care by ensuring all students feel academic success from the tutoring; in return, students feel comfortable advocating for teacher support by asking both the teacher and principal for additional academic support opportunities. The principal's open-door policy encourages professional relationships that embody confidence, honesty, appreciation and open communication. As a result, the school culture creates an environment where teachers feel valued and empowered.

2. **Engaging Families and Community:**

The key strategy that STEM Early College employs regarding engaging community is to maintain good two-way communication. The school was founded in 2012 with donations rallied from the Guilford Education Alliance. The Guilford Education Alliance pulled together major companies such Syngeta, Volvo, Honda Jet, and Carolina Biological, to name a few. More than fifty community partnerships, including outside companies and departments at N.C. A&T embraced the mission and vision of STEM Early College and committed a minimum of four year fiscal and human resource support. The partners are still pleased with the outcome of the program and have maintained their partnerships, some via private donations and other human resource support such as mentorships, internships, face to face volunteerism, company tours, service learning opportunities, and general educational support. Each year to maintain good relationships, provide program updates, and be transparent about school needs, STEM Early College hosts a partnership breakfast in conjunction with the Guilford Education Alliance to bring together our original community support group.

Regarding parents, STEM Early College has a large supportive community base. It begins with the PTSA working with the principal each year to create school wide goals with which parents can support and monitor with a PTSA meeting each month. For the 2017-18 school year, the goals were to have a school wide homecoming event that included the alumni and families, host a multicultural fair, and increase lines

of communication regarding Advanced Placement exam preparation and methods of support from the home. Parents feel comfortable communicating with the staff and principal about their needs and concerns and the GCS respectful, responsive services policy requires responses within 24-48 hours. Also, parents are active on our school leadership team and meet with us monthly to review and provide feedback on the school improvement plan.

Students are a key part of our family and community engagement strategy. The students can clearly articulate their work and college and career goals. With each community visit, students are asked to speak with and network among the companies; this is value-added to both the student and company as we work to reinforce 21st century soft skills. The partnering companies investment is at work and student representation in the community is the outcome. The parents and community members always love to speak with students to ask questions about their goals and needs.

3. Professional Development:

The STEM Early College at N.C. A&T is designated as a high performing school where greater than 95% of the students are proficient in English II, Math I, Biology, ACT, ACT WorkKeys, and Math III, as evidence by the 2016-2017 North Carolina School Report Card. However, we recognize there is a gap between our students' performance on the state standardized tests and their performance on the Advanced Placement (AP) exams. Our 2016-2017 Advanced Placement data indicates an overall 68% proficiency rate, which does reflect 11.5 percentage points growth in the pass rate from the previous school year. To respond to this data point, we established an AP Professional Learning Community (PLC) with a deliberate, collaborative focus on reviewing and discussing data related to AP achievement and deficiencies, sharing common instructional practices, and providing critical feedback on instructional approaches, methods, interventions, and assessments. The AP PLC has an outcome of creating targeted interventions for specific students to increase the overall AP pass rate. Beyond our school AP PLC, teachers have access to content specific PLCs from the district designed by the district Advanced Learning department.

The concept of "smart failure" was initially established for our Advanced Placement courses. However, it captured the phenomena of smart failure for the entire school community. The intent of the capacity for all stakeholders is to embrace learning risks and think beyond the status quo and it aligns with our school's core beliefs related to growth mindset. The smart failure initiative arose from meaningful and collaborative professional and quality classroom discourse. The professionals at the school value the art of discourse and embody that as professionals; our professional discourse allows for problems to surface, ideas to be brainstormed, and solutions to be created, implemented, and measured. Ultimately, STEM Early College supports student achievement by attaching data to faces supported by solution-oriented professional discourse.

Annually, all teachers are given the opportunity to attend content specific professional development locally and nationally. During the 2016-2017 school year teachers attended the following professional development: AP Capstone Seminar, AP Calculus AB, ASCD Aspire 2017, Global Worldview Conference, ACT Training and Support, to name a few. Beyond the professional development that enhances school culture and professional collaborative learning, teachers have free access to pursue content specific training to increase pedagogy practices specific to their classroom. Our school improvement is positively affected by educated professionals who are high quality practitioners in their content within a community of professional lifelong learners.

4. School Leadership:

STEM Early College's leadership approach is all-inclusive. The leadership team is comprised of the principal, curriculum facilitator, counselor, and instructional technology specialist. Our administrative team grants teachers and staff the opportunity to aid in the growth and transformation of the school. Even though the Guilford County Schools (GCS) recently highlighted the need for transformational teaching, our leadership had established the vision and put objectives into place that emphasized three of the six GCS core beliefs about teaching and learning. Those three core beliefs are growth mindset, critical thinking, and

diversity. A long-term vision was established beginning with the book study Mindset in 2015 leading to the book study GRIT in 2017-2018. Alongside the book study, the leadership team rolled out new developments for each year. For 2017-2018 we implemented the AP Capstone Seminar, began a communication day for teacher to communicate with stakeholders during their planning periods, launched a one to one laptop initiative with instructional technology support, and provided instructional feedback via lesson plan review and classroom walkthroughs each week. The leadership team commits to implementing the new development with fidelity and has established the mantra that "Feedback is a gift". The aforementioned new developments have an assigned teacher leader, they are aligned to the North Carolina professional teaching standards, and they clearly communicate the staff expectations.

As the students and teachers adhere to the leadership standards, everyone involved learns from each other and creates a selfless mutual relationship which influences moral actions and academic success. The need for growth mindset and diversity helps release organizational constraints among teachers and students. The book study continues to impact conversations with students and staff as we embrace smart failure. Student achievement is the focal point of the leadership philosophy, which is the reason for adopting messages related to perseverance, integrity, respect, and risk taking. The principal along with school leaders and stakeholders model this type of moral leadership for student achievement inclusive of values and integrity. The alignment among growth mindset, critical thinking, and diversity as a function of learning equals policies that support learning risks, programs that support innovation, and relationships that foster school and community support resulting in high achievement (i.e. AP Capstone). Our principal has the uncanny ability to stimulate creativity and innovation by exploring assumptions, reorganizing issues, and addressing old concerns in an innovative manner. She has the skills to provide individualized attention to peers, students, and followers as they develop and succeed.

Part VI – STRATEGIES FOR ACADEMIC SUCCESS

The STEM Early College at N.C. A&T fosters an innovative spirit among the students, faculty, and school community. Ultimately, we are a school of high achievers who define success beyond grades. With the goal of producing global citizens, engaged and motivated to solve real world problems, our quest is to intersect character education and STEM. We have adopted character development and service learning as vehicles for making the school and world a better place to learn and live. This approach undergirds students actions and supports ethically sound innovation and decision making.

Character development and service learning are the heart of altruistic living. Our vision is to grow our students' character and introduce the lens of service for all students, which is the socio-emotional cornerstone for citizenship. STEM students must understand "to engineer is human." They must possess the character, capacity, and academic foundation to impact ethical solutions. Toward that end, our strategy for academic success, that has been most instrumental, is the implementation of a character development and service learning program. Each student completes a minimum of 100 service learning hours over the course of four years. This entails a team of high school students collaborating with college professors, engaging in research and creating curriculum that will meet the academic, social, and emotional needs of marginalized students within our school district. The curriculum and partnerships with elementary students produce a sustainable agriscience-based solution to the food and nutrition gap that exists in our community. Another example of integrating character and STEM is the innovative approach our teachers take in instructional planning. In our Honors Biology class, ninth grade students tackled the challenge of preserving rare birds. By applying their knowledge of embryonic cells and their research on the ethics and morals, the students grew chickens from an egg without a shell.

Our intentional focus on character education and service-Learning for the past five years has evolved to include students, parents, staff and the community; thus, everyone's voice is heard, everyone can share in solutions, and everyone understands our mission: to provide an interdisciplinary approach using critical thinking to solve real-world issues in a STEM problem-based, learning environment. Our character education initiative earned STEM Early College the designated of North Carolina State School of Character.