# Carolina STEM Academy

(Letter of Intent was originally named The Academy of the Carolinas)

## 2013 North Carolina Charter Application
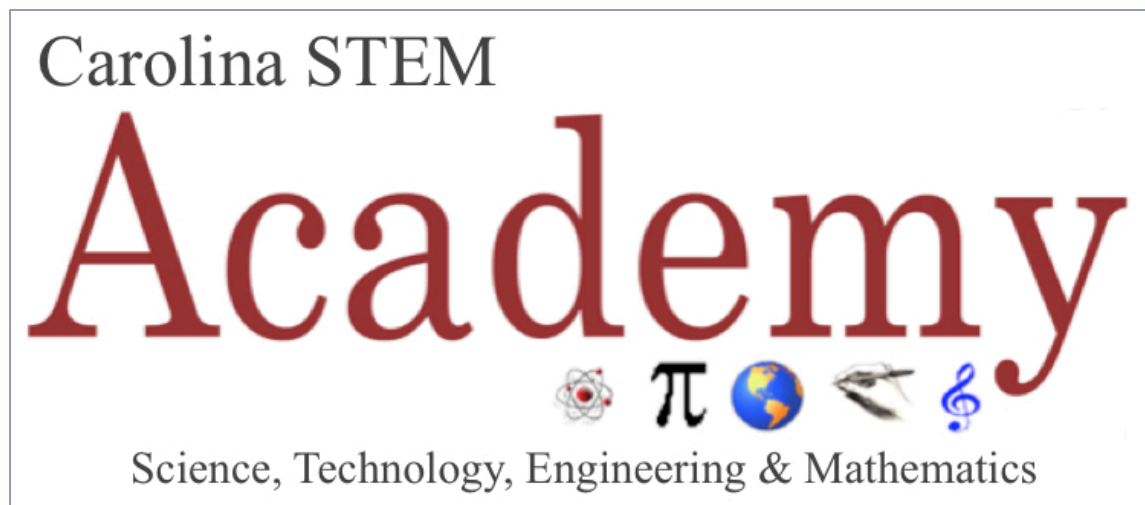


Carolina STEM

# Academy

Science, Technology, Engineering & Mathematics

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# Section I.      Application Contact Information

**Name of proposed charter school: Carolina STEM Academy**

**Has the organization applied for 501(c)(3) non-profit status:    Yes☐    No ☒**

**Name of non-profit organization under which charter will be organized or operated: The Academy of the Carolinas, Inc.**

**Name of contact person: Julian Macri**
**Title/Relationship to nonprofit: President**
**Mailing address: 5129 Chestnut Knoll Lane, Suite A, Charlotte, NC 28269**
**Primary telephone:   704-778-8595**
**Alternative telephone: 704-596-6242**
**E-Mail address: Julian.Macri@academycarolinas.net**

**Name of county and local education agency (LEA) in which charter school will reside:**
**County: Mecklenburg**
**LEA: Charlotte-Mecklenburg Schools**

**Is this application a Conversion from a traditional public school or private school?**
No:  ☒
Yes: ☐          If so, Public ☐ or Private:☐

If yes, please provide the current school or organization web site address:
If a private school, give the name of the private school being converted:

If a traditional public school, give the name and six-digit identifier of the traditional public school being converted:            -         -

Is this application being submitted as a replication of a current charter school model?
No:  ☒
Yes: ☐

If replication, please provide the name of the charter school and the state that charter school has been authorized to operate in.

# Proposed Grade Levels Served and Total Enrollment

Projected School Opening:     Year  **2014**          Month  **08**

Will this school operate on a year round schedule?

No: ☒
Yes: ☐

**Table 1: Proposed Grade Levels and Total Student Enrollment**

| Academic School Year | Grade Levels | Total Projected Student Enrollment |
|---|---|---|
| First Year | 9, 10 | 200 |
| Second Year | 9, 10, 11 | 300 |
| Third Year | 9, 10, 11, 12 | 380 |
| Fourth Year | 9, 10, 11, 12 | 400 |
| Fifth Year | 9, 10, 11, 12 | 400 |
| Sixth Year | 9, 10, 11, 12 | 400 |
| Seventh Year | 9, 10, 11, 12 | 400 |
| Eighth Year | 9, 10, 11, 12 | 400 |
| Ninth Year | 9, 10, 11, 12 | 400 |
| Tenth Year | 9, 10, 11, 12 | 400 |

The State Board of Education provides funds to charter schools, approves the original members of the boards of directors of the charter schools, has the authority to grant, supervise, and revoke charters, and demands full accountability from charter schools for school finances and student performance.

I certify that I have the authority to submit this application and that the founding board members and I were regularly involved in the development of this application. All information contained herein is complete and accurate. I realize that any misrepresentation could result in disqualification from the application process or revocation after award. I understand that incomplete applications may not be considered. The person named as the contact person for the application is so authorized to serve as the primary contact for this application on behalf of the applicant.

_Giuliano (Julian) Macri_     PRESIDENT
_Signature_     _Title_

GIULIANO (JULIAN) MACRI     2-24-13
_Printed Name_     _Date_

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# Section II.    Mission and Purposes

## Mission

Our mission is to meet the needs of students who thirst for a Science, Technology, Engineering and Mathematics (STEM) focused education.  We aim to create a charter high school that is academically challenging and STEM-centered, that uses proven, sensible and flexible teaching strategies, differentiated approaches catered toward individual learning styles, all within an inspiring learning environment.  By creating a culture of collaboration, global connections and forging STEM-related partnerships with local businesses and colleges, our students will be:

- **M**otivated for academic success,
- **A**spiring to obtain 21st Century skills; and,
- **P**repared for the professional challenges of a global community.

## Educational Need and Targeted Student Population

According to the 2009 Organisation for Economic Co-operation and Development's Programme for International Student Assessment (PISA) study[1], the United States ranked as low as 31st in Math and 23rd in Science amongst all industrialized nations.  The results of this study were a wake-up call for United States business and education communities generating awareness for the need for improved STEM education. In response, in 2010 the President's Council of Advisors on Science and Technology made several strong recommendations to the White House for our nation, including:

- Create 1000 new STEM-focused schools over the next decade.
- Create opportunities for inspiration through individual and group experiences outside the classroom, and
- Recruit and train 100,000 great STEM teachers over the next decade who are able to prepare and inspire students.[2]

The 2009 PISA study also showed that the United States has an above-average gap between male and female proficiency in Science and Math.  In addition, a report by the Commission of Professionals of Science and Technology indicates that less than 20% of the undergraduate engineering enrollments are women and that less than 10% are African American or Hispanic.[3]

Overall, as a nation, we need to improve the level of STEM education for all students with an extra focus on women and minorities.  Carolina STEM Academy aims to do its part to meet this need in the Charlotte area.

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[1] PISA 2009 results as reported by the Organization for Economic Co-operation and Development (OECD). http://www.oecd.org/document/0,3746,en_2649_201185_46462759_1_1_1_1,00.html
[2] http://whitehouse.gov/sites/default/files/microsites/ostp/pcast-stemed-report.pdf
[3] http://www.cpst.org/

Over the past three years, as the vision for the school has been developed, members of the board have spread the word and evangelized about the need for a STEM-focused school in the Charlotte area. We have over 100 "friends of the academy" contained in an email directory, all who show their support of bringing a STEM-focused school to the Charlotte area. We have networked with community leaders and received verbal support from the director and chairwoman of University City Partners, a local agency that markets the business benefits of the University City area of Mecklenburg County, which is where we intend to locate the school.

Additionally, Carolina STEM has received letters of support from State Representative Larry G. Pittman representing Cabarrus County in the NC General Assembly, from Dean Calhoun, UNC-Charlotte College of Education, from the Electric Power Research Institute (EPRI), and from other organizations and individuals as well (see appendix A).

We have also received a letter of encouragement from the Charlotte Area Science Network, a local non-profit organization headed by former governor Jim Martin that promotes science in the Charlotte region (copy of letter in appendix A).

1.  Provide a description of Targeted Population in terms of demographics. In your description, include how this population will reflect the racial and ethnic composition of the school system in which it is located. Describe the rationale for selecting the location and student body.

    Carolina STEM Academy will be designed to inspire high academic achievement from a broad range of students. Our curriculum will be tailored for students with either the aptitude **or** the attitude needed to learn and succeed at science and technology. Our plan is to locate the school in the northeast portion of Mecklenburg County near UNC-Charlotte with easy access from either I-485 or I-85. At that location, we could easily take advantage of any partnerships we develop with UNC-Charlotte and with technology companies in University Research Park and Concord, NC.

    Via the I-485 "outer belt", the school would be within a 30 minute drive from the Lake Norman area to the north, the Matthews, Ballantyne, and Wesley Chapel areas to the south, central Charlotte, and Concord; therefore, we envision a diverse student body from Mecklenburg and Cabarrus counties (and potentially Union, Iredell, and Gaston counties) who desire a STEM-focused education that otherwise may not be available to them.

    According to 2010 US Census data, those living in closest proximity to the proposed school location represent a diverse group of whom 20.9% live below the poverty line.[4] Please refer to Table 2 on the next page for demographic details.

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[4] http://factfinder2.census.gov

**Table 2: Demographics Near Proposed School Location**

| | Carolina STEM | University City | Concord | Harrisburg | Mint Hill | Idlewild | Hickory Grove | Northlake |
|---|---|---|---|---|---|---|---|---|
| Zip Code --> | 28262 | 28269 | 28025 | 28075 | 28277 | 28212 | 28215 | 28216 |
| Population | 37,547 | 71,048 | 49,160 | 16,143 | 32,573 | 38,457 | 53,629 | 47,208 |
| % Age 5-19 Years | 26.2 | 23.7 | 21.6 | 25.6 | 19.0 | 21.1 | 23.6 | 23.4 |
| % Below Poverty Line | 20.9 | 10.3 | 14.5 | 6.1 | 9.0 | 25.3 | 15.9 | 17.3 |
| % White | 40.1 | 44.0 | 74.6 | 77.7 | 90.0 | 31.8 | 32.5 | 27.0 |
| % African American | 39.6 | 42.3 | 15.2 | 15.3 | 4.0 | 44.0 | 50.5 | 63.6 |
| % Hispanic or Latino | 8.9 | 9.3 | 12.3 | 3.6 | 2.0 | 2.8 | 18.1 | 7.8 |
| % Asian | 12.2 | 6.1 | <1 | 3.8 | 2.0 | 3.7 | <1 | 2.5 |

2. <mark>What will be the projected enrollment at the charter school and what percentage of the Average Daily Membership (ADM) does that reflect for the local, impacted LEA(s)?</mark>
Expected enrollment will eventually be 400 with an assumption that 80% will come from the Charlotte-Mecklenburg Schools LEA and 20% from the Cabarrus County Schools LEA.

3. <mark>Explain how the charter school's education plan will compare to or differ from that of the local LEA(s).</mark>
Carolina STEM's education plan can best be compared to that of our local LEA, Charlotte-Mecklenburg Schools (CMS), by contrasting it to the programs at the two CMS STEM magnet schools, Phillip O. Berry Academy of Technology and METS (Math, Engineering, Technology, and Science) at Olympic High School.

While our education plan shares much in common with the approaches taken at those two magnet schools (STEM focus, hands-on science and engineering, emphasis on technology, global awareness), our plan differs from their approaches in the following ways:
- We will have longer school days with supervised flextime during the day for remediation, acceleration, group work, or homework.
- Students will have exposure to certain STEM-oriented themes, such as motorsports engineering or robotics, across the curriculum. For example, the motorsports theme might show up as the chemistry of fuels in Chemistry, acceleration and braking in Physics, automobile suspension systems in engineering, and the impact of racing on the Charlotte economy in an economics class.
- Many of our classes will be inverted, with class presentations and notes being delivered online, while class time is spent on labs, problems, and group work.
- Through our collaboration with the various colleges and departments at the University of North Carolina at Charlotte (UNCC), we will be able to offer STEM classes beyond those offered at Phillip O. Berry and METS. Our objective is to give our junior and senior students college-level research experiences.

4. <mark>In the appendices (Appendix A), you must provide evidence through a narrative or visual of this educational need through survey data, or times and locations of public meetings discussing this proposed charter school. (Please do not provide more than one sample survey form).</mark>

## Purposes of Proposed Charter School

**[GS 115C-238.29A(1)] Improve student learning…**
A 2009 study found that the best performing schools set high expectations on their students.[5]
This will be true as well at Carolina STEM Academy. Most STEM courses will be designed as
Honors or AP level. All students will be expected to master fundamental skills before moving
on to more advanced courses and will be given tutoring and remediation if they fall behind.
Additionally, acceleration opportunities will be provided as part of additional schooling time,
known as "flextime", that will exist during the school day. Acceleration will also be provided
via a healthy offering of AP level courses with all students expected to take advantage of some
of these offerings. For further acceleration, we will look to offer unique learning and
collaboration options with UNCC, we will provide distance learning classes for advanced topics,
as well as offer learning opportunities and potential internships with local technology companies.

**[GS 115C-238.29A(2)] Increase learning opportunities for all students…**
According to various studies, results support that extended school days and alternative learning
methods lead to better student success, particularly for at-risk students, and more consistent
results for all students. The Carolina STEM school year will exceed the national average by
nearly 100 hours per year.[6] The longer school day will give us the opportunity to provide
accelerated learning for each class offering as well as remediation and tutoring.

**[GS 115C-238.29A(3)] Encourage use of different and innovative methods…**
We will experiment with innovative approaches such as "flipped" classrooms in which students
view recorded lectures on their own time and then do homework, projects, and problem sets at
school in collaboration with other students and with facilitation from instructors. Also, with our
partnership with the UNCC College of Education, we will be able to act as a crucible for trying
out new instructional delivery approaches.

**[GS 115C-238.29A(4)] Create new professional opportunities for teachers…**
Professional development of the teaching staff will be an important element of the school with
yearly Professional Development Plans created for each teacher. All teachers will collaborate in
course development, but they will also have the flexibility to adjust within their classrooms.

**[GS 115C-238.29A(5)] Provide parents and students with expanded choices…**
Our school will offer more technology and engineering courses than is typically offered in the
public school systems; more opportunities to take college level courses via collaboration with
UNC-Charlotte; and, increased opportunities to compete in scholastic events such as science
fairs, robotics competitions, college bowls, Odyssey of the Mind, Future Problem Solving, etc.

**[GS 115C-238.29A(6)] Hold the schools established under this part accountable…**
Student achievement will be measured via the school's stated goals and metrics.

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[5] http://rapsa.org/pdf/2009_Handouts/106_206_Murray.pdf
[6] Ibid.

## Goals for the Proposed Charter School

1. How will the governing board know that the proposed public charter school has attained their mission statement? What metrics will be used to gauge that success, and how often will the metrics be reviewed in your analysis?

   The mission of the school is to meet the needs of students who thirst for a Science, Technology, Engineering and Math (STEM) focused education. To assess that, the following goal will be used:

- **GOAL**: Maintain the students' enthusiasm for STEM and place them on a track for collegiate studies in STEM fields.
   - o **METRIC**: Via entry and graduation surveys, compare the percent of students who want to attend college in a STEM major when they enter Carolina STEM versus the percentage that do get accepted into college and plan to major in a STEM discipline.
   - o **TARGET**: The percentage remains the same or increases between the entry and graduation surveys, beginning in the 3rd year of operation. (i.e. the first graduating class).
   - o **MISSION ALIGNMENT**: Successfully putting students on a collegiate track in science, technology, engineering, and mathematics means that we were able to meet their thirst for STEM education.
   - o **METRIC ANALYSIS**: The results will be stratified by gender and by ethnicity/race in order to understand any positive or negative trends and make adjustments to the curriculum and educational approach as necessary.

2. Provide specific and measurable student achievement performance goals for the school's educational program and the method of demonstrating that students have attained the skills and knowledge specified for those goals. These goals should include specific and measurable performance objectives over the first five years of the schools existence.

   The following goals represent specific objectives that support our overall mission statement:

- **GOAL**: Prepare students to be successful in their collegiate careers.
   - o **METRIC**: Percentage of students who take an AP exam that receives a score of 4 or 5 (the top two scores that can be attained).
   - o **TARGET**: 36% by the 3rd year of operations, 38% by the 4th year of operations, and 40% by the 5th year of operations.[7]
   - o **MISSION ALIGNMENT**: Putting students on a track to succeed and excel in science, technology, engineering, and mathematics perfectly aligns with the call to help the United States stop its educational decline and prepare students for success in the 21st century.
   - o **METRIC ANALYSIS**: The results will be stratified by gender and by ethnicity/race in order to understand any positive or negative trends and make adjustments to the curriculum and educational approach as necessary. Additionally, we will look to see if any issues exist with a particular subject area and make adjustments accordingly.

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[7] According the College Board 2011 data, 36% of North Carolina students who took an AP exam scored a 4 or a 5.

- **GOAL**: Parents are confident that their children are being prepared for their post-secondary studies and careers.
  - **METRIC**: Via a satisfaction survey of parents of junior and senior year students, the percentage reporting that they are confident and satisfied in their children's education at the school.
  - **TARGET**: 60% by the 3$^{rd}$ year of operations, 70% by the 4$^{th}$ year of operations, and 80% by the 5$^{th}$ year of operations.
  - **MISSION ALIGNMENT**: Ensuring that the parents are confident in the education that their children are receiving will also ensure their continued support and involvement in the school both of which are important to meeting the mission of the school.
  - **METRIC ANALYSIS**: If parental satisfaction is trending negatively, we will hold parent feedback meetings and perhaps follow-up surveys in order to drill down to the exact issues that are causing the dissatisfaction.

- **GOAL**: Teachers have a voice in the educational approaches taken at the school.
  - **METRIC**: Via an annual satisfaction survey of teachers, the percentage reporting that they are satisfied in their jobs and in the development of the school's educational program.
  - **TARGET**: 60% in the 1$^{st}$ year of operations, 70% by the 3$^{rd}$ year of operations, and 80% by the 5$^{th}$ year of operations.
  - **MISSION ALIGNMENT**: Happy and motivated teachers are the linchpins of any successful school without which we would not be able to achieve the stated mission.
  - **METRIC ANALYSIS**: If teacher satisfaction is trending negatively, we will provide a means for teachers to further express their reasoning in an anonymous way so that the school administration and/or the Board of Directors can take actions to improve the teaching environment.

# Section III.   Education Plan

## Instructional Program

Carolina STEM Academy is founded on the belief that any student, motivated by a love of science, engineering, or math, can be successful and have a rich and rewarding future career in the STEM (science, technology, engineering and mathematics) disciplines.  Through a set of core values, we feel that a positive environment for learning can be created that will motivate students to succeed, help them aspire to learn 21st Century skills, and prepare themselves to meet the professional challenges they will face.  These core values of Passion, Respect, High Achievement, "Go Beyond the Walls", Global Citizenship, and Partnership permeate through our instructional program and can be found in more detail in the appendix on page R-3.

The instructional approach to be taken at Carolina STEM Academy will be one that aims to meet the learning model that is present in Bloom's Taxonomy (see Figure 1).
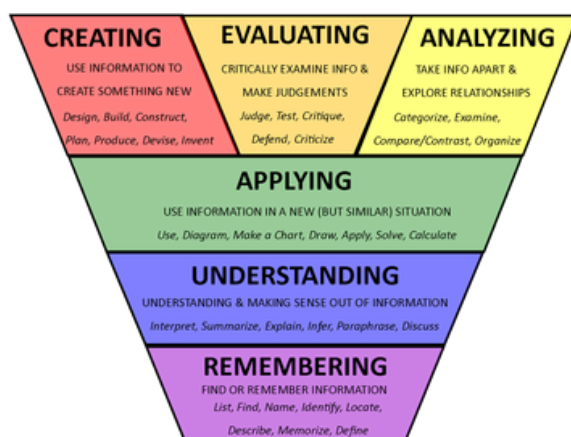


**Figure 1: Bloom's Taxonomy of Learning**

Bloom's Taxonomy[8] posits that learning comes in six different forms that build on top of one another.  The most basic level of understanding is known a *Remembering* in which a student can simply memorize facts and define terminology.  *Remembering* is the first step to the next, basic level of learning, *Understanding*, in which a student can interpret and express the meaning and implications of what they have learned.  Once understood, a student needs to learn how to *Apply* their learning to solve problems.  This can be a challenge for some students.

Although the bottom three categories are important, the top three categories are most critical in helping Carolina STEM Academy achieve its mission.  Truly mastering a subject is when a student can exhibit features of *Creating*, *Evaluating*, and *Analyzing*.  These are the skills necessary for a scientist or engineer in the working world.  Unfortunately, in a typical school setting, much (if not most) of the available class time is spent on the bottom segment of Bloom's

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[8] Bloom's Digital Taxonomy, http://edorigami.wikispaces.com/Bloom%27s+Digital+Taxonomy

Taxonomy. We aim to address this problem at Carolina STEM Academy and help students achieve the *Creating*, *Evaluating,* and *Analyzing* portions of the taxonomy. Four approaches will be incorporated to do this: 1) 20% more instruction time during the school year, 2) tutoring and remediation, 3) hands-on project work, and 4) "flipped" learning.

The daily schedule will span 8 hours with 7.1 hours of that time devoted to instruction time:
- **Planned Instruction Time (**4 blocks of 80 to 90 minutes in duration**)**: Each semester, each student will be enrolled in only 4 academic courses that they attend every day thereby giving them the opportunity to deeply focus on that material and earn a credit in the span of one semester rather than over one year. This focus increases their chance of mastery. Students can then complete more quickly some of the pre-reqs necessary for more advanced courses.
- **Flextime (**95 to 105 minutes of time per day broken up into multiple sections**)**: For 3 days per week, flextime will be used for formal remediation or tutoring, acceleration, club activities, and free study time to view online lectures and complete homework/projects at school. During the other two days of the week, part of flextime will be used for students to attend one Art/Music/PE/Health class allowing them to earn their required Art/Music credit over two years and their required PE/Health credit over the other two years.

Much of the school time will be devoted to hands-on projects, especially in engineering. We want students to learn the use of basic tools and break down and build things. They should have the opportunity to learn to design concepts, construct, test, and then re-design as necessary. Similarly, via science experimentation, we expect the scientific method to be practiced by our students in laboratory settings. Additionally, we seek, via our UNC-Charlotte collaboration, to give students opportunities to "go beyond the walls" and get hands-on experience in a university setting. Overall, the purpose of these experiences will be to help students achieve the *Creating*, *Evaluating*, and *Analyzing* portions of Bloom's Taxonomy.

In our view, *Remembering* and *Understanding* are best done outside the classroom in a "flipped" setting in which the students access recorded lessons via computer or other device (either at home or at school during flextime) and then works on assignments and exercises at school with teacher facilitation. In this way, the *Remembering* portion of the taxonomy is the responsibility of the student. As a result, this leaves class time for the higher-order types of learning in Bloom's Taxonomy. The "flipped" model is fairly new in recent years but has been implemented successfully across the country. One of the better-known examples is Clintondale High School ([www.flippedhighschool.com](www.flippedhighschool.com)) in Michigan.[9] Flipped learning gives teachers more time to work 1:1 with students and better tailor this time to each student's learning style. From a student's point of view, by watching pre-recorded lectures on their own time, they can pause/rewind as much as they need in order to understand the material. It also allows students to accelerate ahead as well if they are mastering material at a faster pace. The school will initially implement the flipped model for a select set of STEM courses and then grow from there.

Additional ideas and approaches under consideration can be found on page R-4.

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[9] http://schoolsofthought.blogs.cnn.com/2012/01/18/my-view-flipped-classrooms-give-every-student-a-chance-to-succeed/

### K-8 Curriculum and Instructional Design
Not applicable due to the fact that Carolina STEM Academy will be a high school.

### High School Curriculum and Instructional Design
Describe the basic learning environment (e.g., classroom-based, independent study), including class size and structure.

The basic learning environment is expected to look similar to a typical high school with some new and modern elements.  Classrooms of various sizes between a capacity of 12 to 25 students are envisioned along with science laboratories that can hold up to 30.  Large technology and engineering rooms with space for equipment and parts will be needed for the "hands on" experiences we desire for our students. The entire facility will be set up for wireless computer access so that all students can have connectivity to the school's technology resources, which may include a virtual desktop environment with collaboration and educational tools (see draft technology vision on page R-5).

Provide a synopsis of the planned curriculum, including:
1.   One sample course scope and sequence for one core subject (specific to the school purpose).
Within Appendix B, on page B-1, a sample course sequence for Science & Math is shown.

2.   As Appendix B2, provide a visual disseminating what courses (core content and electives) will be offered in year one through year five of the charter high school.  Please ensure the projected staff and budget aligns with the course offerings.
Within Appendix B, on page B-2, a draft curriculum is included.  Our plan for when to begin offering each individual course will depend on the student body we have on hand each individual year and the demand that exists.  For example, since our first year of operation we will only have 9th and 10th grade students, we will not be offering AP Chemistry since we aren't likely to have any students ready for it.  In the event that there is a student who is qualified, we will collaborate with the NC School of Science and Math to make their courses available via Internet link.

3.   Identify how this curriculum aligns with the proposed charter school's mission, targeted student population, and North Carolina Accountability Model.
In alignment with our school's mission to deliver outstanding STEM education, our curriculum will be more heavily weighted towards these subject areas than is typical for a high school.  We will market to students who want to go into Science, Technology, Engineering and/or Math; therefore, we will provide a wider range of courses in these disciplines to meet their needs.  Regarding alignment with the North Carolina Accountability Model, our curriculum is closely modeled on the NC Future-Ready Core Curriculum.  Students will be expected to take and succeed in Algebra II.  Through our remediation and tutoring efforts, we expect to meet the set of standards in that portion of the Accountability Model.  Additionally, with a goal and metric of preparing students to attend college in a STEM-related field, we foresee meeting the graduation rate, performance composite, and ACT aspects of the Accountability Model as well.

4.   Describe the primary instructional strategies the school will expect teachers to master and explain why they will result in increased academic achievement for the targeted population.
At Carolina STEM Academy, teachers will need to exhibit leadership skills, curriculum development skills, collaboration skills, and show responsibility in their own professional

development.  Teachers will be expected to master the use of technology specifically in order to implement "flipped" learning in many cases.  Having the ability to create video and audio lectures will be critical.  They will need the ability to be able to work with students 1-on-1 or in small groups, in a facilitative role, throughout the day in a fluid, less-structured environment. The combination of flexibility, involvement in the curriculum develop, professional growth, and being part of a technology school that is successful at bringing students into the higher levels of learning will have a positive impact on the teachers' job satisfaction and staff retention.  Higher teacher satisfaction will contribute to a more effective learning environment.

5.  ==Explain how the proposed instructional plan and graduation requirements will ensure student readiness for college or other postsecondary opportunities.==
From the first day a student sets foot in our school, we will make it clear that our goal for them is to attend college.  We aim to develop a "collegiate-feel" in our school through independence and responsibility.  Our curriculum will be accelerated with most classes being Honors level along with a rich set of AP (i.e. college-level) offerings.  Also, our expected collaborations with UNCC will give students a taste of what it takes to attend and succeed in college.

6.  ==Provide a school academic calendar (min. of 185 instructional days or 1,025 hours) and a narrative on how the calendar coincides with the tenets of the mission and education plan.==
Carolina STEM Academy will plan to follow a 174-day schedule.  The school year will be broken up into two semesters of 87 days each of which will be further sub-divided into four grading periods of approximately 22 school days.  With 7.1 hours of instruction time each day, this will equate to 1,232.5 hours each academic year (20% more than the stated minimum requirement).  With this additional time, there will be plentiful opportunities to provide tutoring and remediation for students who are falling behind and enrichment/acceleration for those students ready for more knowledge.

**Special Programs and "At-Risk" Students**
1.  ==Describe the methods and clear systems of prevention and intervention teachers will utilize to provide assistance to students that are not performing at expected levels: ensuring continued progress and academic student growth.==
True mastering of a subject will be required for the set of courses that are considered foundational (e.g. Algebra I, Algebra II, Physics I, English I, Spanish I, etc.) to succeeding at higher-level courses.  In those courses, any student receiving a C or C+ at the end of a grading period will be required to receive additional tutoring at school, during flextime, in that subject during the next 4½-week grading period (even if it spills over into the next semester and overlaps the next course in the sequence).  Any student that receives a failing grade during a grading period will not only receive tutoring, but there will be a meeting set up with the appropriate dean to put together a plan for success.  Additionally, math and writing assessments will be given at the start of 9th and 10th grades in order to identify "at risk" students with serious deficiencies.

2.  ==Explain how the instructional plan and curriculum will meet the needs of English Language Learner (ELL) students, including the following:  a) Methods for identifying ELL students, b) Specific instructional programs, practices, and strategies the school will employ to ensure academic success and equitable access to the core academic program for these students, and==

c) Plans for monitoring and evaluating the progress and success of ELL students, including exiting students from ELL services.

English Language Learner (ELL) students will initially self-identify when they complete paperwork and state their native language. Any student that declares a native language other than English will be tested using the standards of World Class Instructional Design and Assessment (WIDA). WIDA is used to identify English proficiency in 27 states, including NC. If the student's need is significant enough, the school will provide English as a Second Language (ESL) instruction. Literacy support in content areas for all ELL students in the areas of linguistic complexity, content vocabulary, vocabulary usage, and language control will be provided.

3. Explain how the school will identify and meet the needs of intellectually gifted students, including the following: a) Specific instructional programs, practices, strategies, and opportunities the school will employ or provide to enhance their abilities, and b) Plans for monitoring and evaluating the progress and success of intellectually gifted students.

Carolina STEM is specifically designed to cater to a broad population of students. The school will note in its records any student that comes with evidence of having been identified as intellectually gifted. All students, though, will be expected to progress at and achieve a high bar of academic success. With the longer school day and its built-in flextime, intellectually gifted students will have opportunities for accelerated learning either from their teachers, from special topic lectures that we intend to plan with UNC-Charlotte professors, to online lectures that are freely available from Internet sources. On a yearly basis, the academic progress of the students identified as intellectually gifted will be reviewed with the intent of improving our curriculum.

## Exceptional Children

### Identification and Records

1. Explain how you will identify students who are enrolled within the charter school that have previously been found to be eligible for special education services or are protected under Section 504 of the Rehabilitation Act.

Carolina STEM believes in providing the opportunity for a STEM-focused education for a broad range of students. As such, we believe in the rights of all students for a "free appropriate public education (FAPE)". As part of the enrollment process, prospective families will be asked if their child has been assessed for and is eligible for special education services through:

- IDEA and has an IEP
- Section 504 of the Rehabilitation Act and has a Section 504 Plan.

To help identify other possible exceptional children that may require special education services, the regular education teachers will be equipped with resources to help them identify students who may benefit from screening and assessment. In some cases, this may include regular education teachers consulting with the Exceptional Children (EC) Director and request the EC Director to observe during a class period. If the teacher feels it is in the student's best interest, in consultation with the School Director, the teacher may reach out to the student's parent(s) and make a written request to have the child receive a complete assessment. Although parental permission is not necessary for basic screening, Carolina STEM believes that a partnership between the school, the student, and the parent(s) best serves everyone's interests.

2.  Provide the process for identifying students who may be eligible for special education services as identified in the federal 'Child Find' mandate.  Be sure to include how student evaluations and assessments will be completed.

Carolina STEM believes in the rights of all students to a "free appropriate public education (FAPE)" and as outlined above, will implement strategies to help identify Special Education Needs students upon enrolling in the school and while attending the school. In consultation with the school's EC Director, we will take the following steps:

- Develop and implement at least two pre-referral intervention plans based on initial screening with strategies to help the student improve. If after two intervention plans the student has not shown significant improvement, then the student's teacher will make a request for a complete educational evaluation.
- The school will make a request to the parent(s), in writing, for a complete educational evaluation for the student.
- Working with the student's parent(s), in accordance with IDEA provisions, the school will ensure the student receives a complete evaluation.
- If the school is not fully equipped to administer all or part of the evaluation, then, at the school's expense, appropriate outside resources will be arranged.
- If a parent does not wish for their child to participate in an evaluation, then in accordance with IDEA, the evaluation will not be administered.

For unidentified, potential Special Education Needs students, Carolina STEM will allow sufficient time for teachers to observe and monitor students in the school environment.

3.  Provide a plan detailing how the records of students with disabilities and 504 Accommodation plans will be properly managed.  Include a) Requesting Records from previous schools, b) Record Confidentiality (on site), and c) Record Compliance (on site).

Carolina STEM will take every measure to protect the confidentiality of all student records, including those students with disabilities. The school will comply with all regulations set by the Family Policy Compliance Office (FPCO). The school's administrative assistant will be in charge of coordinating and managing all student records. When making student record requests from other schools, this will be done confidentially and Carolina STEM will request that records come in a sealed envelope marked attention to school administration (private and confidential). All student records will be kept in a locked file cabinet away from public view. To access student records, teachers and/or the student's IEP Team members must follow proper procedure and sign in with the school's administrative assistant. Student records may not be removed from the school. Parents may request a copy of their child's records.

Exceptional Children's Education Programming

1.  Describe the educational programs, strategies, and additional supports the school will provide to ensure a full continuum of services for students with disabilities.

Once a student is evaluated and identified as a Special Education Needs student, Carolina STEM will do the following to help meet the needs of the student: a) Create the student's IEP Team and develop an IEP Plan for that student, b) Liaise with the local branch of the Exceptional Children's Assistance Center to access up-to-date information and resources for the student, c) Ensure the student receives the appropriate specialized support and services as made possible through State Aid (PRC 32) and IDEA Part B (PRC 60) funding allocated to the student through

the school, and d) Develop a strong partnership between the school, the student, the parent(s) and Special Education professionals and others.  Also, Carolina STEM will be a hands-on learning environment with project-based curricula.  Research supports that students with learning disabilities learn better by doing rather than lectures. In accordance with the student's IEP Plan, appropriate teaching methods, learning environments and other strategies will be put in to action to help the student succeed academically, socially, and emotionally.

2.  Describe the methods and support systems that will be in place to ensure students with disabilities receive a Free and Appropriate Public Education (FAPE).

Carolina STEM will work closely with the Special Education community to provide the best methods and support systems so that students with disabilities educational needs are met to the same level as regular education students. These methods can include the following:

a)  Technology Tools – to let students give feedback by testing their understanding and helping the teacher know if students are following and comprehending the lesson.

b)  Improve Student's Executive Functions – mental processes to perform activities such as planning, organizing, strategizing, paying attention to and remembering details and managing time and space. Teachers will be provided the tools and training to help strengthen a student's executive functions for success in school and beyond.[10]

3.  Describe how implementation of the Individualized Education Plan (IEP) will be monitored and reported to the student, parents and relevant staff.

Carolina STEM will ensure compliance with all student IEPs and will have the following guidelines and procedures in place:

a)  A comprehensive, written IEP will be kept in the student's locked file on site along with all the relevant, supporting documentation and IEP Team progress reports.

b)  Carolina STEM has reporting periods approximately every 4 weeks. IEP Team progress reports for all students with IEPs will be made available to parents, students (16 years of age and older) and relevant staff (as per parental approval) at that time.

c)  Recommendations or modifications to a student's IEP can be made any time during the school year including but not limited to reporting periods.

4.  Describe the proposed plan for providing related services.

Carolina STEM will comply with all Federal and State regulations for serving exceptional children.  Following are some of the commitments that Carolina STEM makes:

- Enrollment to all children will be open, regardless of disability status.
- Assistive technology devices or assistive technology services, or both, will be made available to a child with a disability, if required.
- Exceptional children will be placed in least restrictive environment.
- Each exceptional child will have an Individualized Educational Plan (IEP).
- An initial evaluation and any reevaluation activities will be conducted with parental consent.
- Annual notices to the parents of exceptional children will be given.

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[10] http://ncld.org/types-learning-disabilities/executive-function-disorders/what-is-executive-function?start=1

- Child with special needs will be placed in the appropriate special program within 90 calendar days of receipt of a referral, unless the parent refuses to give consent.

Although learning outcomes for exceptional children is mostly the same with students in general education, some exceptional children may need some accommodations to meet learning outcomes. Therefore, exceptional children will be provided additional educational opportunities, depending on their specific needs, such as advanced and challenging instruction, highly qualified personnel and professional development, individualized student instruction, extended time, tutoring, and one-on-one teaching during flextime.

## Student Performance Standards

1. Describe the student performance standards for the school as a whole.

Carolina STEM Academy will set a higher bar for success for its students in three ways:

- All of our science, technology, engineering, and math courses will be offered at an Honors or AP level. Any student who wants to attend our school must have the expectation that the STEM course offerings will be at a higher level of rigor.
- A passing grade will be a C or above; D grades will not be offered.
- True mastery of a subject will be required for all courses that are considered foundational (e.g. Algebra I, Algebra II, Physics I, English I, Spanish I, etc.) to succeeding at higher-level courses. In those foundational courses, any student receiving less than a B at the end of a grading period will be required to receive additional tutoring in that subject, during flextime, during the next 4½-week grading period (even if it spills over into the next semester).

2. Explain the use of any evaluation tool or assessment that the proposed charter school will use in addition to any state or federally mandated tests. Describe how this data will be used to drive instruction and improve the curriculum over time for the benefit of students.

Carolina STEM will administer a math and writing assessment at the beginning of each student's 9th and 10th grade. The results of the assessment will be used for three purposes: a) identify any "at risk" students and develop a learning plan for them, b) identify any gaps or unique student needs in order to plan differentiated instruction, and c) measure the progress that has occurred in 9th grade and make modifications to the curriculum or instructional approach, if necessary.

3. Explain the policies and standards for promoting students, including students with special needs, from one grade level to the next. Discuss how and when promotion criteria will be communicated to parents and students.

During their four years at the school, students will be expected to work towards meeting the graduation requirements. They will be "promoted" to the next grade as long as they are on track to completing the graduation requirements within four years; otherwise, they will be "held back".

4. Provide the public charter school's exit standards for graduating students. These standards should set forth what students in the last grade served will know and be able to do.

The general standard is that student's will be prepared to undertake any STEM major at college. This will be achieved via graduation requirements that exceed NC Future-Ready Core standards.

## High School Graduation Requirements

- 8 credits in Science & Mathematics and

- 4 credits in Technology & Engineering
- 4 additional elective credits in STEM (Science & Math and/or Tech & Engineering)
- 12 credits in Humanities & Arts
- 1 credit of PE/Health
- Senior Project
- Participation in an academic competition or club during at least one academic year.

1. If implemented, describe how the proposed charter school will meet the Future-Ready Core requirements. Provide details on how the students will earn credit hours, how grade-point averages will be calculated, what information will be on transcripts.

The draft curriculum and the graduation requirements have been developed to exceed the Future-Ready Core standards (see Table 3 below).

### Table 3: Future-Ready Core Requirements

| Subject Area | Future-Ready | Carolina STEM Academy |
|---|---|---|
| English | 4 credits | 4 credits |
| Social Studies | 4 credits | 4 credits |
| Mathematics | 4 credits | 4 credits |
| Science | 3 credits | 4 credits |
| Technology & Engineering | | 4 credits |
| PE/Health | 1 credit | 1 credit |
| Electives | 2 credits (Arts or World Languages) 4 credit concentration | 3 credits World Languages 1 credit in Art, Music, or Drama 4 additional credits in STEM |

Each full semester course will be worth 1 credit (the exception will likely be in Art/Music and PE/Health which may be delivered in smaller quantities and stretched out over two years); therefore, for each grading period that a student passes (there are 4 grading periods per semester), that student will receive 1/4 of a credit for that course. Each course will be assigned a grade point value (standard level course will be worth 4 points, honors level courses will be worth 4.5 points, and AP courses and other advanced-level courses will be worth 5 points). Table 4 shows how grade points will be assigned for purposes of calculating GPA.

### Table 4: Grade Point Convention

| Grade | Grade Criteria | Standard Level Grade Points | Honors Level Grade Points | AP Level Grade Points |
|---|---|---|---|---|
| A | >= 90 | 4.0 | 4.5 | 5.0 |
| B+ | >= 85 | 3.5 | 4.0 | 4.5 |
| B | >= 80 | 3.0 | 3.5 | 4.0 |
| C+ | >= 75 | 2.5 | 3.0 | 3.5 |
| C | >= 70 | 2.0 | 2.0 | 2.5 |
| F | < 70 | 0.0 | 0.0 | 0.0 |

At the end of each grading period (there are four grading periods per semester), each student will earn "raw" and "weighted" grade points. The raw GPA is simply based on assigning grade points based on a 4-point scale that is the same as the standard level. The weighted grade points are based on the grade point scale shown in Table 4. With the grade points, each student will

have both raw and weighted grade point averages (GPA) that will be calculated simply by taking his/her total grade points earned (both raw and weighted) divided by the number of grades received. For purposes of determining class rank, the total quantity of weighted grade points each student has earned will be used. Note that PE/Health will likely be a Pass/Fail class. Passing the class will be a requirement for graduation but will not factor into GPA or class rank.

Transcripts will include all information required by the State of North Carolina, the list of all courses attempted and grades, the student's raw and weighted GPA's, an indication of whether or not that student passed PE/Health, their class rank, and their graduation status.

2. Explain the plan for graduating students with special education needs.
Carolina STEM's goal is for all students to succeed. All students at the school will have access to tutoring and remediation during the extended school day format. For Special Education Needs students, their IEP Team will ensure that as part of their IEP Plan, they have access to the proper programs and support to help them meet graduation requirements.

3. Explain what systems and structures the school will implement for students at risk of dropping out and/or not meeting the proposed graduation requirements.
Carolina STEM is built on a foundation of collaboration and partnerships. We recognize that schools do not exist in isolation and that they cannot do everything alone. Schools need the help and support of the whole community. To that end, in addition to the built-in methods and supports of the school, Carolina STEM plans to reach out to organizations such as the National Dropout Prevention Center, the National Summer Learning Association and the Commonwealth Institute for Parent Leadership (CIPL) for guidance, resources and support. Through these strategic, collaborative partnerships, Carolina STEM can help those at risk of dropping out and/or not meeting our proposed graduation requirements.

## Student Conduct and Discipline
Carolina STEM is committed to providing a safe, caring, respectful and effective learning environment for its students, faculty, staff, parents, volunteers and visitors. Students are expected to be responsible and conduct themselves in a manner that respects the rights and property of others. The school's Board of Directors requires that the expectations be clearly communicated and encourages the School Director and the overall school community to undertake activities designed to foster appropriate conduct. Carolina STEM believes that parents, as partners, play a vital role in instilling and reinforcing skills necessary for appropriate conduct.

Provide a draft copy of the student handbook within the appendices (Appendix C). Include:
1. Practices the school will use to promote effective discipline.
2. A preliminary list and definitions of the offenses that may result in suspension or expulsion of students.
3. An explanation of how the school will take into account the rights of students with disabilities in regards to these actions that may or must lead to suspension/expulsion.
4. Policies and procedures disseminating due process rights, including grievance procedures, for when a student is suspended or expelled.

# Section IV.   Governance, Operations and Capacity

## Private Nonprofit Corporation

Name of Private Nonprofit:  The Academy of the Carolinas, Inc.

Mailing Address:
>   Street Address:  5129 Chestnut Knoll Lane, Suite A
>   City/State/Zip:  Charlotte, NC 28269

Phone:  704-778-8595
Fax:  704-598-9542

Name of registered agent and address:
>   Giuliano Macri
>   5129 Chestnut Knoll Lane, Suite A
>   Charlotte, NC 28269

FEDERAL TAX ID:  45-3233676

## Tax-Exempt Status 501(c)(3)

The private nonprofit listed as the responsible organization for the proposed charter school has received 501 (c)(3) status:

☐   **Yes (copy of letter from federal government attached: Appendix D)**

☒   **No**

**NOTE:**   If the non-profit organization has yet to obtain the 501(c)(3) status, the tax-exempt status must be obtained from the Internal Revenue Service within twenty-four (24) months of the date the Charter Application is given final approval.

# Governance and Organizational Structure of Private Nonprofit Organization

**Table 5: Board of Directors**

| Board Member Name | Board Title | County/State of Residence | Current Occupation |
|---|---|---|---|
| Giuliano Macri | President | Mecklenburg, NC | Senior Technology Architect |
| David Johnston | Vice President, Treasurer | Cabarrus, NC | Non-Profit Chairman |
| Toni Hemming | Secretary | Mecklenburg, NC | Communications Consultant |
| Arindam Mukherjee | Member | Mecklenburg, NC | Associate Professor of Electrical and Computer Engineering |
| Animikh Sen | Member | Mecklenburg, NC | Technology Consultant |
| Jeffrey Overton | Member | Mecklenburg, NC | Senior QA Analyst |

1. A well-defined organizational chart showing the relationship of the Board of Directors to the parents and staff of the proposed charter school. This chart should also include lines of authority to and from any outside entity that will play a role in managing or supporting the charter school (such as educational service providers, advisory bodies or parent/teacher councils).
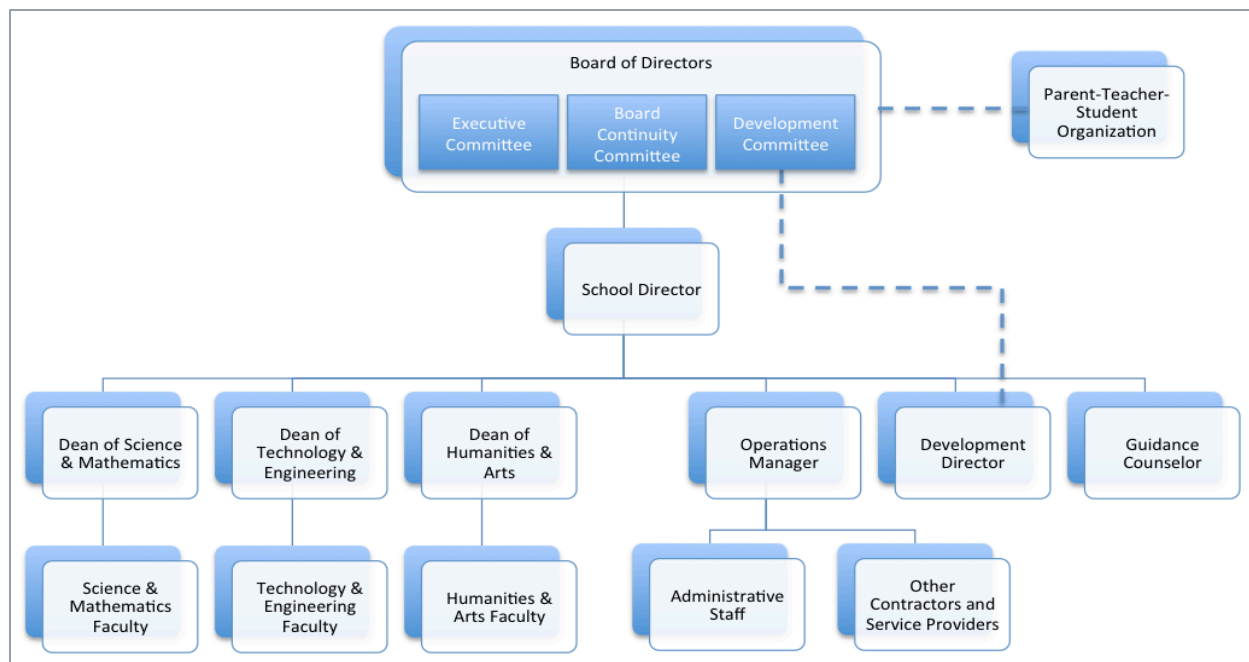


**Figure 2: Organizational Structure**

2. <mark>A description of the governance structure of the proposed charter school, including the governing board's functions, primary duties, roles and responsibilities as it relates to overseeing the charter school. Include how the board will recruit, hire, and supervise the lead administrator.</mark>

In the first few years, the board will play an active role in setting the school's direction. The board will seek out and obtain facilities, develop the initial curriculum, form partnerships with UNC-Charlotte and local companies, market the school, and hire the operating staff. As is true with other schools, over time these responsibilities will more and more become the responsibility of the operating staff with the board continuing to set high level policy. The Executive Committee, a sub-committee of the Board, made of the main officers of the corporation (i.e. the President, Vice-President, Secretary, and Treasurer), will be most active in evaluating how the school is functioning to ensure that it continues to meet the policies and the overall mission of the school.

The School Director will be the first major hire that the Board of Directors will need to make. A recruiting firm will likely be consulted to identify candidates. Prior to interviews, the Board shall agree on the exact skills and values it wishes to seek in a candidate. Members of the Executive Committee will first interview candidates with a select few being asked to meet with the overall Board. The Board of Directors, via vote, will select the one candidate to which it wishes to extend an offer.

The School Director, in conjunction with the Executive Committee, will interview and hire a Dean of Science & Mathematics, a Dean of Technology & Engineering, and a Dean of Humanities & Arts. These deans will report directly to the School Director and they will develop the overall curriculum and manage the faculty in their areas as well as be teachers themselves. It is envisioned that the deans and their faculty will collaborate across departments to ensure consistency and integration across the course offerings.

Additionally, the School Director shall hire a Guidance Counselor for the school as well as an Operations Manager and a Development Director. Although the Development Director will report directly to the School Director, he or she will be expected to work closely with the Development Committee.

The Board of Directors shall set specific and measurable goals for the School Director in alignment with the school's mission. The School Director, at each Board meeting, shall report progress against these goals. At the end of each school year, an annual performance review shall be held with the School Director to evaluate and provide feedback on the School Director's job performance. Prior to the start of each school year, goals may be re-evaluated and reset for the upcoming year and the School Director shall present to the Board a plan of tactics and approaches to be implemented to meet those goals.

To get insight into the parental involvement and satisfaction with the school, on a regular basis, the head of the Parent-Teacher-Student Organization (PTSO) will be asked to report status and concerns to the board.

In order to continually have a strong board, a Board Continuity Committee will exist with a primary objective to identify community leaders that would be ideal candidates to serve on our board and, on a yearly basis, make recommendations on whether or not to interview and invite them to join.

A third committee, the Development Committee, will be formed with the objective to expand relationships with the community.  This will involve media relations, corporate partnerships, community outreach, fundraising, and grant seeking.  The Development Committee is expected to work closely with the Development Director in setting and achieving goals for fundraising, community relations, brand management and marketing.

3.  Describe the size, current and desired composition, powers, and duties of the governing board. Identify key skills, areas of expertise, and constituencies that will be represented on the governing board.  Explain how this governance structure and composition will help ensure that a) the school will be an educational and operational success; b) the board will evaluate the success of the school and school leader; and c) there will be active and effective representation of key stakeholders, including parents.

The Board of Directors shall consist of between 4 and 9 voting members serving staggered, 3-year terms.  New members to the Board shall be by invitation and vote of the existing Board members.  The intent is to have a varied set of skills represented such as education, marketing, finance, legal, real estate, community relations, fundraising, etc. We will aim to have approximately 20% of the board consist of senior leaders in local corporations, preferably technology companies.  Overall, the types of skills and experiences we will seek to add to the board in the near-term are listed in Table 6.

**Table 6: Skill Needed for Board of Directors**

| Skill | Description | Timeframe | Comments |
|---|---|---|---|
| Development and Partnership | A local company leader who can network on behalf of the school. | 2Q2013 | |
| Educator | Teacher and/or administrator | 3Q2013 | Will drive out the curriculum in detail. |
| Legal | Lawyer to ensure proper practices. | 4Q2013 | |

In order to maintain our partnership with UNC-Charlotte, we would expect to have university faculty on the board as well.  With the UNCC, education, and corporate representation, we will have to have a strong STEM emphasis on the composition of the board, in alignment with the school's mission.  Additionally, by having people with business experience on the board, we will be able to leverage their knowledge when in comes to operational and business decisions that need to be made.

In consultation with the School Director and the Deans, success metrics will be conceived and evaluated, on a yearly basis, to measure the effectiveness of the school.

As mentioned above, in order to continually have a strong board, a Board Continuity Committee will exist whose primary objective is to identify community leaders that would be ideal candidates to serve on our board and, on a yearly basis, make recommendations on whether or not to interview and invite them to join.

In addition to the general board members, the School Director and the PTSO President shall be considered to be non-voting members of the Board and will be expected to attend and contribute at all Board meetings.

4. Explain the procedure by which the founding board members have been recruited and selected. If a position is vacant, how and on what timeline will new members be recruited and added to the board?
Three of the board members came together due to common interests and concerns about education. The remaining board members were identified as having skills that were lacking on the board. They were first interviewed by the President and Vice President and then asked to speak with the overall board. After deliberation, the board held a vote and elected the additional members.

For additional skills we will seek to add to the board this year, see Table 6 on page 25.

5. How often will the board meet?
The Board of Directors will be expected to meet on a monthly basis. At the first board meeting of each fiscal year (fiscal year runs from July through June), a meeting schedule for the upcoming year will be established and published by the new board.

6. What kinds of orientation or training will new board members receive, and what kinds of ongoing professional development will existing board members receive? The plan for training and development should include a timetable, specific topics to be addressed, and requirements for participation (Board Policies Draft: Appendix H).
A "New Member On-Boarding" document will be created that will be given to any person that joins the board of Carolina STEM. The document will provide the following:
- The existing board policies.
- An overview of the education plan and philosophy.
- An overview of the shared drive where all documentation is managed.
- An overview of general board procedures explaining how and when the board meets, the general rules of order, and the decision-making process that occurs.
- General expectations of the various roles board members may play.
- A historical narrative of the school.

On a yearly basis, the Board of Directors will hold a summer retreat for strategic planning and enhanced board training. The Board of Directors will also take advantage of any state-provided board training.

7. Describe the board's ethical standards and procedures for identifying and addressing conflicts of interest. Identify any existing relationships that could pose actual or perceived

conflicts if the application is approved; discuss specific steps that the board will take to avoid any actual conflicts and to mitigate perceived conflicts.

A Conflict of Interest policy has been approved by the board (see Appendix H on page H-1). On a yearly basis, each board member will be expected to sign a "Commitment and Conflict of Interest" letter that, along with their commitment level to the school, will also acknowledge their understanding and agreement with the corporation's conflict of interest policy. In that letter, each board member must state any possible conflicts of interest they have and they will be expected to recuse themselves from any board meeting votes in which they have a real or perceived conflict of interest. A template of the "Commitment and Conflict of Interest" letter can be found within Appendix R on page R-1.

8. Explain the decision-making processes the board will use to develop school policies.
Any proposed new policies or policy changes will be introduced at a board meeting and pros and cons will be discussed. Someone from the board will be tasked to research and develop a draft policy. At an ensuing public board meeting, the draft policy will be reviewed and debated. If necessary, the board may seek legal advice. When debate is complete and draft revisions have been made, following normal rules of order, the Board of Directors will vote on whether or not to accept and publish the proposed policy.

9. Describe any advisory bodies, councils, or associations listed in the organization chart or to be formed, including the roles and duties of that body, and the reporting structure as it relates to the school's governing body and leadership.
In addition to the Executive Committee and the Board Continuity Committee, a Development Committee will be formed of board members and others. We see this committee as being critical to the long-term success of the school. Also, a Parent-Teacher-Student Organization (PTSO) will be formed represented by the PTSO President as a non-voting member of the Board of Directors. This group will give the board a third-party view that will be critical to understanding the overall status and success of the school at the grassroots level.

**Include in the Appendices**:
10. A one-page resume from each founding board member and responses to the questions found on the Charter School Board Member Form (Appendix E).
11. The proposed by-laws, which must include a Conflict of Interest Policy for board members and a stated commitment to the NC Open Meetings Law (Appendix F). **NOTE**: Our Conflict of Interest and Open Meeting policies can be found in Appendix H.
12. A copy of the articles of incorporation, if available. If not available, this document must be available prior to interview by SBE, the applicant must demonstrate that it has been applied for prior to submission of the proposed application. (Appendix G)
13. Copy of any board policies if adopted already (Appendix H).
14. Copies of meeting minutes (if available), relevant to the development of the charter school plan, during the application process (Appendix I).

# Proposed Management Organization (EMO/CMO)
☒ **Not Applicable**

# Private School Conversions
☒ **Not Applicable**


# Charter School Replication
☒ **Not Applicable**


# Projected Staff
Provide, as Appendix K, a list of positions anticipated for the charter school; (e.g., principal or director; finance officer, administrative support staff; teachers (part-time and full-time); paraprofessionals/teaching assistants, clerical, and maintenance.). Be mindful that your predicted administration and staff match the projected enrollment noted in Section I and align with the proposed budget.

**Staffing Plans, Hiring, and Management**

Include the following information for the proposed charter school:
1. Explain the board's strategy for recruiting and retaining high-performing teachers.
   Recruiting and retaining high-performing, quality teachers is the cornerstone for any school's success. By working with and marketing to recent graduates and other alumni of "Teaching Fellows NC (UNCC, Queens, UNCW, UNCG, UNCP, Appalachian, ECU, NCCU, Elon and others)" and the Charlotte branch of "Teach for America", advertising and hosting teacher recruitment information events and Facebook promotion, Carolina STEM will build a pool of teacher candidates who aspire to teach in a welcoming, supportive and collaborative environment.

   With regards to retention, according to a study by the National Center for Education Statistics, high job satisfaction is paramount to success and is affected by several extrinsic factors beyond salary alone.[11] Additionally, a 2011 MetLife analysis[12] stated that "teachers with high job satisfaction are … more likely to have adequate opportunities for professional development, time to collaborate with other teachers, more preparation and support to engage parents effectively, and greater involvement of parents and their schools in coming together to improve the learning and success of students." Carolina STEM understands that teacher motivation is less driven by merit pay and more so by other factors; therefore, the following values will entice teachers to stay at our school:
   - **Collaboration & Innovation**: Teachers are happiest in a work environment that welcomes and encourages ideas, input, innovation and collaboration. Our school will develop and maintain its curriculum both at a team level and at an individual level. We envision each of our schools of learning (science & math, technology & engineering, humanities & arts) having its team of instructors develop its own curriculum and class goals for each offered course. Individually, the teachers for each course will have the flexibility to modify the syllabus and their teaching

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[11] http://nces.ed.gov/pubs97/97471.pdf

[12] https://www.metlife.com/assets/cao/foundation/MetLife-Teacher-Survey-2011.pdf

approach based on the progress of the students or any other changes in conditions as long as the overall goals of the course are eventually met.

- **Development**:  Teachers want relevant, meaningful, professional development opportunities.  Individually, teachers will develop a Professional Development Plan in conjunction with their managing Dean.  The faculty will be asked to solicit ideas for professional development such as conferences and other training and the school calendar may be adjusted to allow for time to attend these events.  Carolina STEM's shorter school calendar of 174 days versus 185 days provides eleven extra days in the school year for professional development opportunities.
- **Professionalism**:  Teachers are talented, educated, creative and resourceful professionals and should be regarded as such. Teaching is not just a job, it's a profession.
- **Support**: Teachers feel respected, secure and overall more satisfied when supported by administration, parents, students and other teachers.

This combination of flexibility, collaboration, professional growth, professionalism, support, along with being part of a technology school that is successful at bringing students into the higher levels of learning will all have a positive impact on the teachers' job satisfaction and overall staff retention.  Higher teacher satisfaction, higher teacher skills, more teacher engagement with students, and lower teacher attrition will all contribute to a better, more effective learning environment for our students.

2.  Provide a description of the relationship that will exist between the charter school employees and the nonprofit board.  Provide as Appendix L, a draft of the employment policies to be implemented by the proposed charter school.

All faculty members will report to a Dean (e.g. Dean of Science & Mathematics, Dean of Technology & Engineering, Dean of Humanities & Arts).  The deans, a Guidance Counselor, an Operations Manager, and a Development Director will report to the School Director.  The School Director, in turn, will report to the overall Board of Directors.

3.  Outline the board's procedures for hiring and dismissing school personnel, including conducting criminal background checks.

The Board of Directors shall be responsible for the hiring and termination of the School Director.  In the event that termination of the School Director is deemed necessary, the Executive Committee will decide the details of the termination (including length of prior notice) contingent on agreement with the School Director's contract.

**Hiring:** When a position becomes available, it will be advertised on the school website, in local and regional news outlets, as well as online job search sites.  Applications for employment shall be accepted and reviewed by the Director and Executive Committee of the Board of Directors, with strong candidates brought in for interviews with the School Director and Executive Committee.  All candidates who reach this stage will undergo criminal background checks.  All hiring decisions for positions below the level of School Director will be made by the School Director, with the exception being that of the Development Director, who will be jointly selected by the Board's Development Committee and the School Director.

**Dismissal:** While the Board intends termination to be the action of last resort, it recognizes that there may be circumstances that will require the dismissal of a school employee. Grounds for dismissal will include, but are not limited to, unacceptable or unsatisfactory performance and violation of the school's codes of conduct. In the case of performance issues, every attempt will be made to resolve the issues prior to dismissal; however, in some cases involving code of conduct violations, termination may be immediate.

In the event that termination is deemed necessary, but immediate termination is not, the employee will be given at least two (2) weeks notice prior to the date of termination.

Hiring and termination decisions for all positions below School Director will be made by the School Director, with the exception of the Development Director; any decision to terminate the Development Director shall be made in consultation with the Development Committee of the Board.

4. Outline the school's proposed salary range and employment benefits for all levels of employment.
   The salary range will be expected to align with the typical range found in local high schools with perhaps a slight premium to accommodate for the fact that the school days will be longer than normal.

   From a benefits perspective, typical health and time off benefits will be provided. No pension plan will be offered but a 401K/403B plan will be provided with a 5% match after the employee completes a 1-year vesting period.

5. Provide the procedures for employee grievance and/or termination.
   The board of Carolina STEM Academy believes that the school should have a fair and well-defined process for resolving conflicts between staff and administration.
   - The School Director should first try to resolve conflicts informally, before they become grievances.
   - Grievances must first be submitted in writing to the School Director.
   - If not resolved by the Director, the written grievance will then be submitted to the Executive Committee of the Board and, if deemed appropriate, legal counsel representing the school.
   - After ensuring that the grievance has been handled in a fair and equitable manner, the Executive Committee will then attempt to resolve the conflict.
   - If the Executive Committee is unable to resolve the grievance, it will be handed over to the overall Board, who will decide what, if any, further steps should be taken.

6. Identify any positions that will have dual responsibilities (within or without the organization) and the funding source for each position.
   No planned "dual responsibility" positions expected at this time.

7. Describe the plans to have qualified staffing adequate for the anticipated special needs population, means for providing qualified staffing for ELL and gifted students.
   The school will comply with all relevant State and Federal laws regarding special needs staffing. Qualified staff for ELL will be hired on an annual basis based on the number and native languages of that year's ELL students. We anticipate that a large percentage of our student population will be students identified as gifted. We will therefore favor teachers with gifted certification in our hiring, and encourage our teachers without gifted certification to pursue it.

8. Provide a narrative detailing the roles and responsibilities, qualifications and appropriate licenses that each position must have to be hired by the non-profit organization and effectively perform the job function(s).
   **Teaching Staff:** As per NC Charter school law, at least 50% of our teachers will be licensed in the subject areas in which they are teaching. Those who are not licensed when hired will be required to obtain (with school assistance) proper licensure within 3 years. As noted above, gifted certification will be viewed positively in applications for teaching roles. Responsibilities: teaching; assessment and grading; communication with parents, curriculum development; for experienced teachers, mentoring other teachers and student teachers.
   **Deans:** At the Carolina STEM Academy, the position of Dean will be a combination of teaching and administration. We will require a teaching license, at least 5 years experience in the classroom, and at least a BA in their subject area, with preference given to candidates with a Master's degree and/or administrative experience. Responsibilities: teaching responsibilities as outlined above; administrative duties for their department (Science & Math, Technology & Engineering, Humanities & Arts); student discipline; teacher evaluations.
   **School Director:** We will require the school director to have at least a Master's degree, preferably a PhD, in Education and/or a STEM-related field. He or she must also have considerable experience in teaching and administration. Responsibilities: support the school's mission, communicate with all school stakeholders, create and nurture partnerships with local and national education and business entities; with other administrative staff, to oversee the day-to-day operations of the school; recruit talented and qualified teachers and administrators for the school; Dean evaluations.

## Staff Evaluation and Professional Development

1. Identify the positions responsible for maintaining teacher licensure requirements and professional development.
   Each Dean will have the responsibility of maintaining and tracking all teacher licensures. Additionally, each Dean will develop a Professional Development Plan with each individual faculty member and assist that teacher in meeting that plan on a yearly basis.

2. Provide a detailed plan noting how the school will mentor, retain, and evaluate staff in a format that matches the school's mission, educational program, and meet the teacher certification and licensure requirements for teachers as prescribed by state law and No Child Left Behind. Be sure this overview matches with the projected staff and funding of the proposed budget section.

**Mentoring:** We intend the school to have a rich atmosphere of mentorship, with learning teams consisting of novice teachers, experienced teacher/mentors, Deans, and industry or university content area experts.

**Retention:** We believe that competitive compensation, enhanced professional development, the presence of student teachers, a supportive and collegial environment, and opportunities for advancement will strengthen our ability to retain staff and faculty.

**Evaluation:** Teacher evaluations will be based on in-class observations by their Deans, student performance on assessments, and overall performance as determined by their Deans. Non-teaching staff will be evaluated by their supervisors based on job expectations and objectives. Deans will have dual evaluations for teaching and administration, with the teacher evaluation portion being derived from in-class observations by the School Director, who will also evaluate their administrative performance. The School Director's performance will be based on annual goals and objectives as set forth by the school's Board of Directors.

**Licensure and Certification Requirements:** Carolina STEM Academy will meet or exceed the certification and licensure standards as set down in NC charter school law and federal law, including No Child Left Behind. All teachers will be required to have at least a bachelor's degree from a four-year college or university and to be competent in their subject area. The school will have at least 50% of its teachers licensed in the subject areas in which they are teaching, with all teachers licensed by the end of their 3rd year of teaching at the school.

3.  Discuss the core components of professional development plan and how these components will support effective implementation of the educational program. Discuss the extent to which professional development will be conducted internally or externally and will be individualized or uniform.

While some pedagogical professional development is important (especially for young teachers), we believe that professional development geared toward deepening a teacher's content knowledge is even more vital. With this in mind, we envision a professional development plan consisting of the following core components:

- Content area seminars by university professors and/or professionals that will strengthen content knowledge for our teachers, allowing them to bring recent developments and deeper knowledge into their classrooms.
- Teaching/Learning Labs (TLLs) in which teachers get to "play" with new techniques, technologies, and labs that they can then take into their classrooms. These TLLs may be delivered by outside experts or by fellow teachers, and may or may not be content specific.
- Time off and funds for teachers to attend conferences, seminars, and workshops of their choice.

4.  Provide a schedule and explanation of professional development that will take place prior to school opening. Explain what will be covered during this induction period and how teachers will be prepared to deliver any unique or particularly challenging aspects of the curriculum and instructional methods.

Carolina STEM Academy will have two main educational approaches that will require professional development for our teachers prior to school opening: flipped classrooms

and the cross-curriculum STEM themes (please see page 9 for a description of these themes). With this in mind, we have tentatively set out the following schedule of pre-opening professional development:

**Days 1 and 2: Flipped classroom resources and techniques.** These days will be given over to presentations regarding flipped classroom methodologies and resources, as well as hands-on experimentation with the equipment and web-based resources needed for flipping the classroom. We intend to have teachers who are experienced in teaching in flipped classroom settings deliver most, if not all, of this professional development.

**Days 3 and 4: STEM Themes.** While specifics regarding which STEM topics will be developed into cross-curriculum themes, we envision at least two days of professional development during which experts in a theme (such as motor sports, robotics, or programming) work with teachers to explore how theme topics can be worked into their curricula (such as racing fuel chemistry in a chemistry class or animation programming for presentations in a social studies class, for example).

5.  Describe the expected number of days/hours for professional development throughout the school year, and explain how the school's calendar, daily schedule, and staffing structure accommodate this plan.

With fewer school days (174 versus the state guideline of 185), more open days will be allocated to allow for teachers to take training and to attend conferences or other professional development events. The school calendar will be drafted at the start of the year with these events in mind, and in consultation with the faculty, so as to allow for 5 to 10 days of professional development for each teacher.

## Enrollment and Marketing

Reaching the full capacity for enrollment will be critical to obtain the necessary financial resources to keep your school viable and operating efficiently. In addition, it is required by law that charter schools provide equal access to all students. Read the charter school state statute regarding admissions GS 115C.238.29F(g) (1-7) carefully.

### Marketing Plan

Marketing to potential students and parents is vital to the survival of a charter school. Provide a plan indicating how the school will market to potential students and parents in order to reasonably reflects the racial/ethnic and demographic composition of the district in which the charter school will be located or of the special population the school seeks to serve: *(G.S.115C-238.29F(g)(5))*.

Carolina STEM wants to reach a broad range of students who desire a STEM-centered education. With plans to locate Carolina STEM in the University Research Park area, we will target students that live within a 30-minute drive from the school. As we market the school, the objective ultimately will be to have a large set of families apply to our school with the demographic of that applicant pool reasonably reflecting the racial/ethnic and demographic composition of the target area (see demographic data in Table 2 on page 8).

For 2013, the goals are:
1. Generate broad awareness through Mecklenburg and Cabarrus Counties that Carolina STEM is organizing itself to open in 2014 with the intent of being the choice school for students with a passion for STEM-based education.
2. Develop a list of 1000 prospective families and students.

**Marketing Tools and Timeline**:

Spring 2013
- Send brief status update to current Carolina STEM friends list via email
- Promote Carolina STEM Facebook page, which will include updates, information and discussions
- Connect with targeted Linkedin groups.
- Distribute Carolina STEM brochures to identified target groups and the general public at "gathering spots" where viable such as pediatrician waiting areas, dental waiting areas, tutoring centers, after-care centers, YMCAs, grocery stores, public libraries and community centers.
- Develop a comprehensive media relations plan with an up-to-date media directory including targeted online, print, radio and television outlets.

Summer 2013
- Liaise with local STEM-related businesses and institutions to help "spread the word" including the Charlotte Area Science Network, Charlotte Research Institute, Discovery Place, Camp Invention, Mad Science Charlotte, Charlotte Nature Museum, UNCC Annual NC Science Festival and University Research Park businesses.
- Liaise with community leaders representing diverse groups.
- Liaise with UNCC Teaching Fellows, NC Community Colleges "Success NC" Committee, Teach for America, National Commission on Teaching and America's Future (NCTAF), NC Science Teachers Association, MeckEd and Charlotte area charter middle schools.
- Liaise with the admissions departments for North Carolina colleges and other targeted universities throughout the United States.
- Press releases to media list for Mecklenburg and Cabarrus counties.
- Request for public service announcement to radio and TV media in Mecklenburg and Cabarrus counties.
- Public invitation events for parents of middle school and rising high school students.
- Identify and participate in STEM-related summer camps and activities in the Charlotte area.
- Identify and sponsor selected STEM-related middle and/or high school competitions, events or activities.

Fall 2013
- Solicit interview opportunities with local reporters/programs that cover education.
- Solicit brief guest spot on Charlotte-based National Public Radio (NPR).
- Ads in Charlotte Parent, Community Newsletters and local publications that reach diverse groups identified in our target population.
- Continue promoting via Facebook page and targeted brochure distribution.

Winter 2014
- "Countdown To Carolina STEM" event for interested parents, students, teachers, prospective/current partners, businesses, sponsors and media. If viable, host event at potential school site.
- Continue social media promotions.
- Establish school website and link to all social media and collateral materials.
- Establish school signage.
- Establish school apparel.

Spring/Summer 2014
- "Countdown To Carolina STEM" celebratory event for school parents, students, teachers, staff, board, partners, sponsors and media on school site.
- Continue timely updates via social media and the website.
- Invite college recruiters to visit Carolina STEM during their regular high school recruitment visits held during the fall in the Charlotte area.

Fall 2014
- Carolina STEM Academy opens

In accordance with Carolina STEM's mission, the marketing plan will be evaluated and adjusted annually.

**Parent and Community Involvement**
1. Describe how you will communicate with and engage parents and community members from the time that the school is approved through opening.

One of our marketing goals is to develop a contact list of 1,000 email addresses.  For the year prior to opening the school, we will send a monthly email out to the list giving updates on our progress as well as encouraging them to spread the word about our school.

Carolina STEM plans to use social media such as Facebook and targeted LinkedIn groups to keep interested parties and stakeholders informed, engaged and up-to-date. The school's interactive, user-friendly website will also serve to keep stakeholders informed with immediate access to relevant and timely information. On a quarterly basis, Carolina STEM will host a "State of the Charter" event for current and prospective families, business and community partners, board members, faculty and staff, advisors and media.  The event will include a brief "State of the Charter" address by the School Director, a video "YOUtube" style compilation of the school's activities/progress followed by a casual social offering finger foods and beverages. Our students will sign up for one of the four events to help serve and "meet and greet" guests.

Similarly, we will keep our community partners informed on a regular basis as well and especially remain active in spreading word about our school within the UNC-Charlotte academic community.  One option is to advertise or ask for a yearly write-up about our school in the University City Partners newsletter, which is regularly published to businesses in the geographic area around UNC-Charlotte.  Additionally, we intend to be active with University City Partner events, with the Charlotte Area Science Network, and with UNC-Charlotte itself.

2. Describe how you will engage parents in the life of the public charter school. Explain the plan for building engaging partnerships between the family and school that strengthen support for student learning.

Parental involvement and volunteering within the school will be strongly encouraged. Volunteer hours at educational events, daily instruction, social events, and marketing events will be recorded and used to support future grant applications. At our quarterly "State of the Charter" events, top volunteers will be publicly recognized for their contributions with the possibility of awards being given in the form of gift cards.

Carolina STEM Academy will foster an active, welcoming Parent-Teacher-Student Organization (PTSO). The PTSO will be responsible for developing and implementing an immediate and 3-5 year plan including volunteer development/support, food services, athletics program, transportation, faculty/staff support, facility support and grassroots level community outreach. The PTSO will report its status and recommendations on a regular basis to the school board.

**Admissions Policy**

Provide the school's proposed policies and the procedures for admitting students to the proposed charter school, including:

1. Tentative dates for application period; enrollment deadlines and procedures.

The application period, with open houses and information sessions, shall be from December 15, 2013 to February 28, 2014 with any necessary lottery being held at an open Board meeting in March 2014. All applications will be reviewed and validated to ensure that all required information has been supplied and that the information meets all State regulations, such as a valid North Carolina address. Carolina STEM Academy will admit or place in the lottery all students with a complete and valid application submitted within the application period.

2. Clear policies and procedures detailing the open enrollment lottery plan including policies regarding statutory permitted student enrollment preferences.

Separately, for each grade, two lists shall be maintained: an acceptance list and a waiting list. If the number of applicants for a grade is less than the number of open spots in that grade, then all applicants will be placed on the acceptance list and they will be enrolled in the school once they register.

In the event that the number of applicants exceeds the number of open spots in a grade, then an open and public lottery shall be held. Each valid application shall be uniquely numbered and a ticket shall be created for each number. Any applicants that meet the State rules for priority admission (e.g. children of faculty, siblings, etc.) will be placed automatically on the acceptance list for their grade. The application tickets for all other shall be drawn at random during the lottery, separately for each grade. The first set of tickets to be randomly drawn shall be for the remaining open spots on the acceptance list. Then, all remaining application tickets shall be randomly drawn and placed sequentially on the waiting list for their grade. All of the lottery results shall be publicly posted at the school for at least a week. All applicants on the acceptance list shall be notified by mail of their acceptance and the top set of applicants on the waiting list shall be notified as well.

Registration for the upcoming school year will occur between May and the first week of the school year. All newly accepted students will be required to register their intent to attend the school. As part of their registration, Carolina STEM proposes requiring evidence of meeting the minimum provisions for admissions requirements (see Table 7). These proposed minimum provisions are similar to other charter schools such as Raleigh Charter High School.

For 9th grade, the proposed provision of admission will be readiness for Algebra I or a higher mathematics course. A positive teacher recommendation for Algebra I or an Algebra Prognosis test score of 167 or higher shall represent evidence for this readiness.

For 10th grade, the proposed provision of admission will be completion of Algebra I with a minimum of a B grade. In the case of a student obtaining a C grade in Algebra I, a positive teacher recommendation will be required from the Algebra I teacher.

For 11th grade, the proposed provision will be completion of Algebra II or Geometry with a minimum of a B grade. In the case of a student obtaining a C grade in Algebra II or Geometry, a positive teacher recommendation will be required from the Algebra II or Geometry teacher.

Carolina STEM Academy will not be admitting new students into the 12th grade. The only exception would be in the case of a sibling of an existing student requesting admission to the school or child of a teacher, Dean, or School Director. In such a case, the School Director and the Deans will evaluate that student's transcript for his/her first three years of high school to determine if he/she is on track and capable of completing the graduation requirements on time.

**Table 7: Proposed Minimum Admissions Requirements**

| Grade | Provision of Admission |
|-------|------------------------|
| 9th | Readiness for Algebra I |
| 10th | Successful completion of Algebra I |
| 11th | Successful completion of Algebra II or Geometry |
| 12th | Recommendation of School Director and Deans (on exception basis) |

If a student does not register by the end of the registration period or has notified us of their intention to NOT attend our school, then the next person on the waiting list shall be moved to the acceptance list and that application will be notified. This process will go on until the end of the 1st semester, at which point no more students will be newly admitted.

3. Policies and procedures for student waiting lists, withdrawals, re-enrollment, and transfers.
If a student withdraws from the school, he/she must fill out a withdrawal form. If this occurs during the registration period, the next applicant on the waiting list will be moved up into the acceptance list and be offered a spot in the school. If a student withdraws from the school and then wishes to re-attend the school, they will then be treated like any other new applicant and will be required to follow the admissions process. When a student transfers to another school and we received a form from the other school stating the student's new enrollment there, Carolina STEM will send all the student's records to the new school.

4.  Explanation of the purpose of any pre-admission activities (if any) for students or parents.
As stated in the admissions requirements, pre-admission activities for any accepted student will involve obtaining and providing any required grades/transcripts, teacher recommendation, and/or standardized test score.  Being a STEM school, a solid understanding of mathematics is important to any student's success.  Therefore, having a minimum provision of readiness for Algebra I in 9th grade is crucial in order to ensure students are able to be on track toward graduation right from the start.

5.  Clear policies and procedures for student withdrawals and transfers.
This has been answered as part of question 3.

### Projected Student Enrollment

| PROJECTED ENROLLMENT 2014-15 through 2018-2019 | |
| --- | --- |
| IDENTIFY LEA FROM WHICH <br><br> STUDENTS WILL PROBABLY COME <br><br> LEA #1 Charlotte-Mecklenburg (600) <br> LEA #2 Cabarrus (130) <br> LEA #3_____ | In the following tables, please list for each year and grade level, the numbers of students that the school reasonably expects to enroll. In addition, please indicate any plans to increase the grade levels offered by the school over time and be sure these figures match those on the initial cover page. <br><br> *The numbers in the following tables are projections, or estimates, and do not bind the State to fund the school at any particular level. |

**Table 8: Projected Student Enrollment**

| | 2014-2015 | | | 2015-2016 | | | 2016-2017 | | | 2017-2018 | | | 2018-2019 | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | LEA 1 | LEA 2 | LEA 3 | LEA 1 | LEA 2 | LEA 3 | LEA 1 | LEA 2 | LEA 3 | LEA 1 | LEA 2 | LEA 3 | LEA 1 | LEA 2 | LEA 3 |
| 9th | 112 | 28 | ___ | 108 | 27 | ___ | 82 | 21 | ___ | 72 | 18 | ___ | 100 | 25 | ___ |
| 10th | 48 | 12 | ___ | 92 | 23 | ___ | 96 | 24 | ___ | 76 | 18 | ___ | 68 | 16 | ___ |
| 11th | ___ | ___ | ___ | 40 | 10 | ___ | 88 | 22 | ___ | 88 | 22 | ___ | 72 | 15 | ___ |
| 12th | ___ | ___ | ___ | ___ | ___ | ___ | 38 | 9 | ___ | 85 | 21 | ___ | 84 | 20 | ___ |
| | 200 | | | 300 | | | 380 | | | 400 | | | 400 | | |

## Transportation Plan

Describe in detail the transportation plan that will ensure that no child is denied access to the school due to lack of transportation. The details of this plan should align with the Mission, identified need for the charter school, targeted student population, and the budget proposal. Carolina STEM Academy will make a good faith effort to ensure transportation is not a barrier to attendance for any student. The school will develop an online carpool system for parents to signup for regular carpooling or to request carpooling help on short notice. It's envisioned that with such a system, parents in various nearby locations can make contact with each other and assist one another with transportation. Through such a system, the school can keep a record of the parents doing the carpooling and provide to them parent volunteer credit for doing so. If any family is struggling to find transportation for their child, they will be given the opportunity to express their transportation problems to the School Director and the school will find a solution for that specific child. If a student has an IEP (Individual Education Plan) that requires transportation, then the school will find a way to ensure transportation for that student.

## School Lunch Plan

Describe in detail the school lunch plan that will ensure that no child is lacking a daily meal. The details of this plan should align with the targeted student population and school budget proposal.
Carolina STEM Academy will contract with external vendors to offer lunch to the students at a fixed cost. The school intends to retain a percentage of the sales as part of the contractual terms with the intent of setting aside part of that money as a "lunch fund" to be made available to any student that shows it meets the guidelines for free and reduced lunch in the public schools.

## Civil Liability and Insurance

The Charter School shall obtain and maintain insurance at a minimum in the following amounts:
1. Errors and omissions: one million dollars ($1,000,000) per claim;
2. General liability: one million dollars ($1,000,000) per occurrence;
3. Boiler and machinery: the replacement cost of the building;
4. Real and personal property: the appraised value of the building and contents;
5. Fidelity bonds: no less than two hundred fifty thousand dollars ($250,000) to cover employee dishonesty;
6. Automobile liability: one million dollars ($1,000,000) per occurrence; and
7. Workers' compensation: as specified by Chapter 97 of the General Statutes.
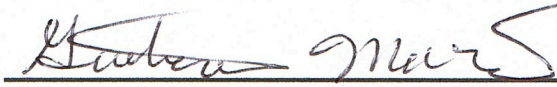
| Area of proposed coverage | Proposed amount of coverage | | Cost (Quote) |
|---|---|---|---|
| Comprehensive General Liability | $1,000,000 | | $4,081 |
| Officers and Directors/Errors and Omissions | $1,000,000 | | Included |
| Property Insurance | $250,000 | | $600 |
| Motor Vehicle Liability | $1,000,000 | | $181 |
| Bonding Minimum/Maximum Amount | $250,000 | $250,000 | 4332 |
| Other | Varies | | $5,830 |
| Total Cost | | | $11,024 |
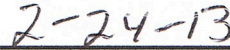
## Health and Safety Requirements

All public charter schools are required to follow the regulations regarding health and safety as stated in § 115C-238.29F (a).

We, the Board members at Carolina STEM Academy will develop a written safety plan and policies to be shared with staff, parents and students and be available upon inspection from the Department of Public Instruction and local Health Departments.

_____     2-24-13_____
(Board Chair Signature)                                      (Date)

## Facility

<mark>What is your plan to obtain a building?  Identify the steps that the board will take to acquire a facility and obtain the Educational Certificate of Occupancy.  If a facility has been identified please fill out the Facility Form (Appendix N).</mark>

As of the writing of this application, Carolina STEM Academy has not identified a specific facility for the school.  We are using Insight Architecture and Conformity Corporation as resources for advice and feedback on ideas and approach regarding the identification, design, and development of a school building.  We envision the need to obtain a 25,000 square foot space that can grow to about 45,000 square feet in a multi-stage plan that follows the growth of the student body from the initial 200 students to the eventual student population of 400.

The steps towards a facility will generally be:
- By June 2013, develop a "Facility Requirements Document" that lists the needed building requirements in terms of overall space, number of classrooms and special learning centers, number of offices, size of external grounds and parking, power and infrastructure needs, etc.
- By July 2013, form a "facility team" consisting of a real estate broker with charter school experience, a developer who will either build new or retrofit an existing facility, and an architect to design an outstanding, educational facility.
- In August 2013, determine the best course of action to follow which will likely be some combination of temporary space, retrofit, or new build.
- By October 2013, enter into a facilities contract.
- By December 2013, have use of unfinished building available for open houses with prospective parents and students.
- By March 2014, choose suppliers for furniture, school laboratory equipment, and technology infrastructure (computer servers, WIFI, etc.).
- By June 2014, have initial facility ready for use with Certificate of Occupancy.
- By July 2014, have all furniture, school laboratories, and technology installed and ready for the first year of occupation.

### Facility Contingency Plan

<mark>Describe the method of finding a facility if the one the board has identified will not be ready by the time the public charter school will be opening.  Include information regarding the immediate spatial needs of the school and identify any programs that will not be immediately offered because a permanent facility has yet to open.</mark>

Our real estate broker will be instructed to find a temporary facility that can be easily set up for a school.  An example can be an empty "big box" store.  There are multiple of these types of facilities available in the geographic are that we are looking at.

# Section V.    Financial Plan

## Financial Projections

**Table 9: Budget Revenue Projections from Each LEA**

| SHOW CALCULATIONS FOR FIGURING STATE AND LOCAL DOLLARS FOR THE PROPOSED CHARTER SCHOOL<br><br>*The formula for figuring these allotments can be found in the Resource Manual Finance Section.* | *See* **Charter School Dollars per ADM** on the following link for per pupil allotments by county.<br>http://dpi.state.nc.us/fbs/allotments/support/<br>• **All per pupil amounts are from the 2012-2013 year and would be approximations for 2014-2015.**<br>• **Federal funding is based upon the number of students enrolled who qualify. The applicant should use caution when relying on federal funding in year one to meet budgetary goals.**<br>• **These revenue projection figures do NOT guarantee the charter school would receive this amount of funding in 2014-2015.**<br>**For local funding amounts, applicants will need to contact their local offices or LEA.** |
|---|---|

**LEA #1 (CHARLOTTE MECKLENBURG - 600)**

| Revenue | 2012-2013 Per Pupil Funding | Projected LEA ADM | Approximate funding for 2014-2015 |
|---|---|---|---|
| State Funds | $ 4,438.40 | 160 | $ 710,144 |
| Federal EC Funds (via State) | $ 3,743.48 | 13 | $ 47,917 |
| Local Funds | $ 2,262.96 | 160 | $ 362,074 |
| Totals | | | $ 1,120,134 |

**LEA #2 (CABARRUS - 130)**

| Revenue | 2012-2013 Per Pupil Funding | Projected LEA ADM | Approximate funding for 2014-2015 |
|---|---|---|---|
| State Funds | $ 4,316.93 | 40 | $ 172,677 |
| Federal EC Funds (via State) | $ 3,743.48 | 3 | $ 11,979 |
| Local Funds | $ 1,598.60 | 40 | $ 63,944 |
| Totals | | | $ 248,600 |

**Table 10: Revenue Projections 2014-2019**

| INCOME: REVENUE PROJECTIONS | 2014-2015 | 2015-2016 | 2016-2017 | 2017-2018 | 2018-2019 |
|---|---|---|---|---|---|
| --State ADM Funds | $ 882,821 | $ 1,324,232 | $ 1,677,360 | $ 1,765,764 | $ 1,766,128 |
| --Federal EC Funds (via State) | $ 59,896 | $ 89,844 | $ 113,802 | $ 119,791 | $ 119,791 |
| --Local Per Pupil Funds | $ 426,018 | $ 639,026 | $ 809,433 | $ 852,700 | $ 854,693 |
| --Other Funds [2] | $ - | $ - | $ - | $ - | $ - |
| TOTAL INCOME | $ 1,368,734 | $ 2,053,102 | $ 2,600,596 | $ 2,738,255 | $ 2,740,612 |

**Table 11: Personnel Budget - Expenditures 2014-2019**

**BUDGET EXPENDITURE PROJECTIONS**

| Personnel | 2014-2015 # Staff | Salary per | Total salary | 2015-2016 # Staff | Salary per | Total salary | 2016-2017 # Staff | Salary per | Total salary | 2017-2018 # Staff | Salary per | Total salary | 2018-2019 # Staff | Salary per | Total salary |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Personnel:** | | | | | | | | | | | | | | | |
| School Director | 1 | $ 80,000 | $ 80,000 | 1 | $ 80,000 | $ 80,000 | 1 | $ 80,000 | $ 80,000 | 1 | $ 80,000 | $ 80,000 | 1 | $ 80,000 | $ 80,000 |
| Operations Manager | 1 | $ 45,000 | $ 45,000 | 1 | $ 45,000 | $ 45,000 | 1 | $ 45,000 | $ 45,000 | 1 | $ 45,000 | $ 45,000 | 1 | $ 45,000 | $ 45,000 |
| Administrative Assistant | 1.5 | $ 25,000 | $ 37,500 | 1.5 | $ 25,000 | $ 37,500 | 1.5 | $ 25,000 | $ 37,500 | 1.5 | $ 25,000 | $ 37,500 | 1.5 | $ 25,000 | $ 37,500 |
| Dean of Education | 3 | $ 50,000 | $ 150,000 | 3 | $ 50,000 | $ 150,000 | 3 | $ 50,000 | $ 150,000 | 3 | $ 50,000 | $ 150,000 | 3 | $ 50,000 | $ 150,000 |
| Teachers | 6 | $ 37,500 | $ 225,000 | 12 | $ 37,500 | $ 450,000 | 15 | $ 37,500 | $ 562,500 | 15 | $ 37,500 | $ 562,500 | 15 | $ 37,500 | $ 562,500 |
| Art/Music/PE | 1 | $ 35,000 | $ 35,000 | 1.5 | $ 35,000 | $ 52,500 | 2.5 | $ 35,000 | $ 87,500 | 2.5 | $ 35,000 | $ 87,500 | 2.5 | $ 35,000 | $ 87,500 |
| Teacher Assistants | 2 | $ 18,500 | $ 37,000 | 3 | $ 18,500 | $ 55,500 | 3 | $ 18,500 | $ 55,500 | 3 | $ 18,500 | $ 55,500 | 3 | $ 18,500 | $ 55,500 |
| EC Director | 0 | $ 44,000 | $ - | 1 | $ 44,000 | $ 44,000 | 1 | $ 44,000 | $ 44,000 | 1 | $ 44,000 | $ 44,000 | 1 | $ 44,000 | $ 44,000 |
| Guidance | 0 | $ 40,000 | $ - | 0 | $ 40,000 | $ - | 0 | $ 40,000 | $ - | 1 | $ 40,000 | $ 40,000 | 1 | $ 40,000 | $ 40,000 |
| Technology | 1 | $ 35,000 | $ 35,000 | 1 | $ 35,000 | $ 35,000 | 1.5 | $ 35,000 | $ 52,500 | 1.5 | $ 35,000 | $ 52,500 | 1.5 | $ 35,000 | $ 52,500 |
| Development Director | 0 | $ 50,000 | $ - | 0 | $ 50,000 | $ - | 1 | $ 50,000 | $ 50,000 | 1 | $ 50,000 | $ 50,000 | 1 | $ 50,000 | $ 50,000 |
| Substitutes | 1 | $ 6,750 | $ 6,750 | 1 | $ 13,500 | $ 13,500 | 1 | $ 16,875 | $ 16,875 | 1 | $ 16,875 | $ 16,875 | 1 | $ 16,875 | $ 16,875 |
| **Total Personnel** | **17.5** | | **$ 651,250** | **26** | | **$ 963,000** | **31.5** | | **$ 1,181,375** | **32.5** | | **$ 1,221,375** | **32.5** | | **$ 1,221,375** |

| Benefits: | # Staff | Cost Per | Total | # Staff | Cost Per | Total | # Staff | Cost Per | Total | # Staff | Cost Per | Total | # Staff | Cost Per | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Health Insurance | 18 | $ - | $ 78,150 | 26 | $ - | $ 115,560 | 32 | $ - | $ 141,765 | 33 | $ - | $ 146,565 | 33 | $ - | $ 146,565 |
| Retirement Plan | 0 | $ - | $ - | 13 | $ - | $ 26,000 | 22 | $ - | $ 44,000 | 27 | $ - | $ 54,000 | 31 | $ - | $ 62,000 |
| Medicare | 18 | $ - | $ 9,443 | 26 | $ - | $ 13,964 | 32 | $ - | $ 17,130 | 33 | $ - | $ 17,710 | 33 | $ - | $ 17,710 |
| Social Security | 18 | $ - | $ 40,378 | 26 | $ - | $ 59,706 | 32 | $ - | $ 73,245 | 33 | $ - | $ 75,725 | 33 | $ - | $ 75,725 |
| Unemployment | 16 | $ - | $ 3,782 | 26 | $ - | $ 6,396 | 32 | $ - | $ 7,938 | 33 | $ - | $ 8,463 | 33 | $ - | $ 8,736 |
| **Total Benefits** | | | **$ 131,753** | | | **$ 221,626** | | | **$ 284,078** | | | **$ 302,463** | | | **$ 310,736** |
| **Total Personnel Budget** | | | **$ 783,003** | | | **$ 1,184,626** | | | **$ 1,465,453** | | | **$ 1,523,838** | | | **$ 1,532,111** |

**Table 12: Operations Budget - Expenditures Projections 2014-2019**

| BUDGET OPERATIONS EXPENDITURE PROJECTIONS | | 2014-2015 | 2015-2016 | 2016-2017 | 2017-2018 | 2018-2019 |
|---|---|---|---|---|---|---|
| Instructional Supplies | Instructional Materials | $ 30,000 | $ 45,000 | $ 57,000 | $ 60,000 | $ 60,000 |
| | Curriculum Licensing | $ 50,000 | $ 50,000 | $ - | $ - | $ - |
| | Testing Supplies | $ 4,000 | $ 6,000 | $ 7,600 | $ 8,000 | $ 8,000 |
| Technology | Technology Hardware | $ 80,000 | $ 120,000 | $ 152,000 | $ 160,000 | $ 160,000 |
| | Office Software | $ 2,500 | $ 2,500 | $ 2,500 | $ 2,500 | $ 2,500 |
| Furniture & Equipment | Instructional Equipment | $ 50,000 | $ 25,000 | $ 20,000 | $ 5,000 | $ - |
| | Office Equipment | $ 26,250 | $ 12,750 | $ 8,250 | $ 1,500 | $ 6,000 |
| Rents and Debt Services | Facility Lease/Mortgage | $ 137,000 | $ 400,000 | $ 585,000 | $ 660,000 | $ 680,000 |
| | Maintenance | $ 6,850 | $ 7,193 | $ 7,552 | $ 7,930 | $ 8,326 |
| | Security/Alarm | $ 10,000 | $ 2,000 | $ 2,000 | $ 2,000 | $ 2,000 |
| | Custodial Services | $ 21,500 | $ 34,200 | $ 42,500 | $ 42,500 | $ 42,500 |
| | Custodial Supplies | $ 4,000 | $ 4,000 | $ 4,000 | $ 4,000 | $ 4,000 |
| | Special Services | $ 23,000 | $ 25,000 | $ 25,000 | $ 25,000 | $ 25,000 |
| Administrative Costs | Professional Development | $ 17,500 | $ 26,000 | $ 63,000 | $ 65,000 | $ 65,000 |
| | Advertising | $ 10,000 | $ 5,000 | $ 5,000 | $ 5,000 | $ 5,000 |
| | Office Supplies | $ 9,500 | $ 6,000 | $ 7,000 | $ 8,000 | $ 8,000 |
| | Financial Services | $ 24,000 | $ 36,000 | $ 45,600 | $ 48,000 | $ 48,000 |
| | Audit Fees | $ - | $ 8,000 | $ 8,000 | $ 8,000 | $ 8,000 |
| | Legal Fees | $ 1,000 | $ 1,000 | $ 1,000 | $ 1,000 | $ 1,000 |
| | Board Expenses | $ 500 | $ 500 | $ 500 | $ 500 | $ 500 |
| Utilities | Telephone | $ 6,000 | $ 6,000 | $ 6,000 | $ 6,000 | $ 6,000 |
| Food/Nutrition | Food Purchases | $ 2,500 | $ 3,750 | $ 4,750 | $ 5,000 | $ 5,000 |
| Insurance | Liability Insurance | $ 6,550 | $ 7,727 | $ 7,847 | $ 8,075 | $ 8,176 |
| | Auto Insurance | $ 181 | $ 181 | $ 181 | $ 181 | $ 181 |
| | Property Insurance | $ 600 | $ 600 | $ 600 | $ 600 | $ 600 |
| | Worker's Compensation | $ 3,361 | $ 5,097 | $ 6,070 | $ 7,121 | $ 7,121 |
| | Scholastic Accident | $ 1,400 | $ 2,100 | $ 2,660 | $ 2,800 | $ 2,800 |
| | Fidelity Bond | $ 332 | $ 332 | $ 332 | $ 332 | $ 332 |
| | TOTAL OPERATIONS | $ 528,524 | $ 841,930 | $ 1,071,942 | $ 1,144,039 | $ 1,164,036 |

**Table 13: Total Budget**

| BUDGET OPERATIONS EXPENDITURE PROJECTIONS | 2014-2015 | 2015-2016 | 2016-2017 | 2017-2018 | 2018-2019 |
|---|---|---|---|---|---|
| TOTAL EXPENDITURES (PERSONNEL) | $ 783,003 | $ 1,184,626 | $ 1,465,453 | $ 1,523,838 | $ 1,532,111 |
| TOTAL EXPENDITURE (OPERATIONS) | $ 528,524 | $ 841,930 | $ 1,071,942 | $ 1,144,039 | $ 1,164,036 |
| TOTAL EXPENDITURES | $ 1,311,527 | $ 2,026,555 | $ 2,537,395 | $ 2,667,877 | $ 2,696,147 |
| TOTAL REVENUE | $ 1,368,734 | $ 2,053,102 | $ 2,600,596 | $ 2,738,255 | $ 2,740,612 |
| ANNUAL NET PROJECTIONS | $ 57,207 | $ 26,547 | $ 63,200 | $ 70,378 | $ 44,465 |

# Budget Narrative

The budget for Carolina STEM Academy was developed over the past year in consultation with Acadia Northstar, our contracted financial management partner. In many cases, estimates and assumptions were compared to and validated with other schools that collaborate with Acadia Northstar. The budget was built and revised over many iterations during which key decisions were made to produce a balanced budget based solely on state and LEA funding while still remaining true to our mission to deliver a high quality, STEM-centered charter high school located in the University City area of Charlotte, NC. No assumptions were made regarding other sources of revenue such as donations, summer camp income, accessory fees, or any other form of fundraising. All dollar figures are based on current day costs, values, and tax rates. No assumption was made for inflation both on the expense and revenue sides. The fiscal year will run from July through June to better align with the academic calendar. Overall, the plan is a conservative one both in terms of income and expenses.

<mark>Please include additional information that showcases all assumptions for your budget.</mark>
- From the perspective of personnel costs:
  o The School Director and each Dean of Education will drive the core mission and values of the school. In order to attract the best candidates, the stated salaries were increased beyond the average for those positions. The increased salary also takes into account the fact we will be running longer than typical school days.
  o In hiring the teaching faculty, we will be seeking candidates with facilitative and technological skills. We envision that the likely person to apply for such a position will be a less experienced teacher will somewhat lower than average salary demand and a lesser expectation of a pension plan. If true, we expect to be able to pay them the typical rate for that level of experience and still attract quality talent without offering retirement benefits beyond a typical 401K/403B plan.

- o Our paid teaching assistants will be joined by a set of unpaid teaching assistants that will be staffed by graduate students from the UNC-Charlotte College of Education. We are in discussions with Dean Calhoun at UNCC about such a collaboration and have received assurances that such an arrangement is possible.
- For benefit costs:
  - o A typical 12% rate for health insurance was used. No assumption was made, either positive or negative, when it comes to any effect from the Affordable Care Act.
  - o Only a 401K/403B plan will be offered as a retirement benefit. A 1-year vesting period will be required before employees can participate in the plan at which point a 5% match will be offered. A 5% teacher attrition rate was also assumed in the retirement plan budget in conjunction with the 1-year vestment period in order to calculate what number of employees may not be on the 401K/403B plan in any given year. This is a very conservative attrition rate as compared to other public high schools in the same geographic area, which are in the 20% to 30% range.[13]
- Other personnel decisions that entered into the budget are:
  - o The Deans of Education will act as guidance counselors to students as well. A dedicated Guidance Counselor will not be hired until the 4th year.
  - o Professional development costs are set at an average of $1,000 per faculty member in the first two years of operation and $2,000 per year afterwards.
  - o Overall, we maintained about a 22:1 teacher to student ratio.
- Student enrollment plays a factor in the budget.
  - o Our original plan was to begin with a 9th grade only but this was not deemed feasible from a budgetary point of view. Starting with two grades and a larger initial student population was helpful in setting the budget.
  - o We assumed a yearly 10% student attrition rate.
  - o For purposes of being conservative with our revenue projections, we assumed an 8% Exceptional Children (EC) population rather than the typical 10% rate.
- Other operating expenses:
  - o A line item of $50,000 in each of the first two years was added to account for expected up-front costs for licensing curriculum from STEM education sources.
  - o Costs were set at $1,500 per faculty member for items such as desks, chairs, boards, etc.
  - o From a technology perspective, conversations with Apple Leasing suggested a good assumption would be $400 per student for laptops and educational software.
  - o For other student equipment such as classroom desks and chairs, we assumed $100 per student and for science equipment; we assumed $150 per student.
- From a facilities perspective:
  - o We will seek a 7 to 10 year lease that includes power and water that, on average, will have a lease rate of $14.00 per square foot. Such a rate, based on conversations with area brokers, seems attainable.
  - o The budget assumes a lease contract with a "back-ended" leasing structure in which we obtain "free rent" in the first year then growing over the long term of the lease. Again, this seems to be a common approach that happens in long-term leases.

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[13] http://www.mecked.org

- o Our budget assumes our lease will start January 2014 and have the following lease rates each of the first 5 years ($0.00, $8.00, $12.50, $15.00, $16.00, with higher rates in the $18 to $20 range in later years) with the following square footage to be rented each year (21,500, 34,200, 42,500, 42,500, 42,500).
- o Our maintenance cost assumption was based on 5% of the lease costs.
- o Custodial services contract is based on an estimate of $1.00 per square foot.
- o From a perspective of security cost of the facility, we budgeted $10,000 for initial setup and then $2,000 per year for monitoring.

1. Describe the budgetary projections and explain the analysis utilized to project these specific enrollment figures. If your budget projections are lower than anticipated, how will the school adjust this budget and what is the determined break-even point for student enrollment?

The entire budget is based solely on income from enrollment and currently shows as being in the black. If enrollment is less than expected and falls below what is necessary to break even financially, then the following budgetary changes will be considered and prioritized:

- We would combine the Dean of Science & Math and the Dean of Technology & Engineering into one hired position. This would save the school about $60,000, which is the equivalent of about 9 students-worth of income.
- The curriculum material line item in the budget assumes $50,000 being spent in each of the first two years to purchase and license technology curriculum resources. We will seek to spread these costs out over four years or more perhaps through some financing arrangement. Reducing this cost to $25,000 per year would be the equivalent of about 3 to 4 students.
- Increasing the teacher-to-student ratio by eliminating teacher positions by arranging more distance-learning courses with the NC School of Science & Math. The salary and benefit cost of each teacher is the equivalent of about 7 students.

2. Describe the systems and processes by which the school will manage accounting, purchasing, payroll, and audits. Specify any administrative services expected to be contracted for the school, and describe the criteria and procedures for the selection of contractors

We have signed a contract with Acadia Northstar to provide all financial administrative services for the school. They were chosen due to their solid track record with other charter schools as well as for the consulting services they were willing to provide in the development of this budget and application.

3. Explain how the spending priorities align with the school's mission, curricular offerings, transportation plans, and professional development needs. Be able to depict in chart format and discuss in a narrative how the school will maintain a small, contingency reserve and operate using sound fiscal practices. As you construct the budget, include any and all documentation about cash on hand, bonds, real estate, or grants.

The budget is based on building a STEM high school. It includes $100,000 for the purposes of purchasing or licensing technology curricula such as Project Lead the Way. It also includes budget items for both science and engineering laboratories. A professional development budget is included that grows to $2,000 per teacher in the 3rd year.

All profit made and unrestricted donations received (see Table 15 below) during each fiscal year will contribute to a school reserve. The plan is to quickly build a reserve early on so as to be

better able to respond to unexpected challenges in later years. Assuming our yearly contingency is not spent, those reserves will grow to over 10% of our budget in the 5$^{th}$ year of operation. Table 14 below calculates these figures based on the 5-year budget that was produced along with the pledged donations from the Board of Directors. Of course, our Development Director will have the responsibility to obtain donations, grants, and perform other fundraising activities in order to further grow our company's financial position in support of our educational programs.

**Table 14: Predicted Reserves**

|  | 2014-2015 | 2015-2016 | 2016-2017 | 2017-2018 | 2018-2019 |
|---|---|---|---|---|---|
| Contingency | 4.2% | 1.3% | 2.4% | 2.6% | 1.6% |
| Contingency with Pledges | 6.0% | 1.4% | 2.5% | 2.7% | 1.6% |
| Cumulative Reserves with Pledges | $72,200 | $101,700 | $167,900 | $241,300 | $285,800 |
| % Cumulative Reserves | 6.0% | 5.0% | 6.5% | 8.8% | 10.4% |

4. Indicate the amount and sources of funds, property or other resources expected to be available through banks, lending institutions, corporations, foundations, grants, etc. Note which are secured and which are anticipated, and include evidence of commitment for any funds on which the school's core operation depends.

At the time of writing this application, Carolina STEM has already received donations and pledges from its board members. The initial four directors each gave $2,000 when the non-profit was incorporated in 2011. The current board members pledge an additional $38,000 over the next five years, as shown in Table 15.

**Table 15: Board Donations and Pledges**

| Who | Corporate Match? | Pre-2013 | 2013 | 2014 | 2015 | 2016 | 2017 | Total |
|---|---|---|---|---|---|---|---|---|
| Julian Macri | Yes | $2,000 | $2,000 | $2,000 |  |  |  | $12,000 |
| David Johnston | Yes | $2,000 | $3,000 |  |  |  |  | $10,000 |
| Toni Hemming |  |  | $5,000 |  |  |  |  | $5,000 |
| Animikh Sen | Yes |  | $1,000 | $1,000 | $1,000 | $1,000 | $1,000 | $10,000 |
| Ari Mukherjee |  |  | $1,000 | $1,000 | $1,000 | $1,000 | $1,000 | $5,000 |
| Jeff Overton |  | $2,000 |  |  |  |  |  | $2,000 |
| Others |  | $2,000 |  |  |  |  |  | $2,000 |
|  |  | $8,000 | $18,000 | $7,000 | $3,000 | $3,000 | $3,000 | $46,000 |

Some of the original $8,000 in seed money has been spent for legal and incorporation costs as well as early marketing expenses. The remaining seed money is likely to be spent on additional marketing and lottery related expenses prior to our first year of school operation. The $25,000 in 2013/2014 pledges will most likely all go towards paying the salary of our first School Director and Deans of Education. We will want to fill these positions by June 2014, one to two months prior to the first allocation that comes from the state.

We expect to fill all of our teaching assistant positions (besides the stated 2 to 3 paid TA's) with students from the UNC-Charlotte College of Education. These unpaid resources will be an important resource for the school.

In order to smooth out the operational expenses that can ebb and flow throughout the school year, we will seek out an arrangement with a financing company such as Charter School Capital that offers short-term loans for just such a purpose.

5. Discuss the school's contingency plan to meet financial needs if anticipated revenues are not received or are lower than estimated. What is the school's break-even student enrollment figure for each of the first five years?

When factoring in the different funding rules and potential for Exceptional Children funding, the average allotment we expect to get is approximately $7,000 per student. Factoring this figure into the planned contingency for each budgeted year, we can calculate what kind of enrollment shortfall we can withstand and determine the break-even enrollment figures for each academic year (see Table 16).

**Table 16: Break-Even Enrollment**

|  | 2014-2015 | 2015-2016 | 2016-2017 | 2017-2018 | 2018-2019 |
|---|---|---|---|---|---|
| Break-Even Enrollment | 192 | 297 | 371 | 390 | 394 |

Our budget assumes no other income besides the allotments that come from the state. We will, though, continually seek to build up the company accounts via various forms of outreach and fundraising. The primary role of the Development Director, in collaboration with the Development Committee, will be to reach out to companies, foundations, and government entities in order to obtain grants and donations (either monetary or physical). We will seek support from our corporate partners either in monetary form or in donations of physical material and equipment as might be typical in a technology school such as ours.

In the event of a shortfall, as stated in question #1 above, we would look to consolidate some administrative roles. Additionally, the school would seek improved terms on leased items. For example, rather than a 4-year lease to purchase plan for laptops, we may extend it to a 5-year plan in order to reduce the cost in the near-term. We would also work with the facility owner to negotiate an adjustment to the leasing terms to delay payments.

If any academic aspects of the school need to be reduced to balance the budget, the School Director will be asked to present a prioritized list of recommendations to the Board of Directors. The board will review the recommendations to ensure that the school's mission continues to be met even with the proposed cuts.

6. Year one cash flow contingency, in the event that revenue projections are not met in advance of opening.

Although not planned in the budget, the school will hold fundraisers and charity events in order to raise additional money beyond the per-student funding received from the state.  These will be held whether or not revenue projections are not met in advance of opening.  Upon approval of the charter, Carolina STEM will reach out to sources of startup capital, which will also be a source of money beyond the per-student projection in the budget.

In the event of a budgetary crisis, we will seek donations and interest-free loans from board members.  For those directors who have pledged to give money each of the first 5 years of the school's operations (see Table 15 on page 48), we could ask them to consider giving the money up-front, if we have shortfalls in the early years.

## Financial Audits

Describe the procedure and method for conducting an independent financial audit for the proposed charter school.

On an annual basis, the Board of Directors of Carolina STEM Academy will contract with an independent auditor to conduct an audit of the school's finances.  The board will select a licensed auditor authorized by State of North Carolina to conduct financial audits for charter schools.  The audit will verify the accuracy of the school's financial reporting throughout the year and other related school records.  The Board of Directors fully recognizes that the purpose of the audit is to have an independent test of its financial and legal stewardship and otherwise demonstrate compliance with state law for a non-profit corporation.  The audit will be conducted in a timely manner with the results of the audit being presented directly to the Board of Directors.

Provide the name and contact information of the firm approved by the NC Local Government Commission (LGC) that will conduct the audit.

Name: Rives & Associates, LLP
Address:  1023 W. Morehead Street, Suite 100, Charlotte, NC 28208
Phone Number:  704-372-0960
Fax Number:  704-372-1458

# Section VI.   LEA Impact Statement

Pursuant to G.S. 115C-238.29B(d), the charter school applicant must submit a copy of the application to the LEA in which the school will be located.  The applicant must submit their application to the LEA within **seven (7) days** from the due date so that proof of submission can be included in the complete application packet.  The LEA may then submit information or comment directly to the Office of Charter Schools for consideration by the State Board of Education.
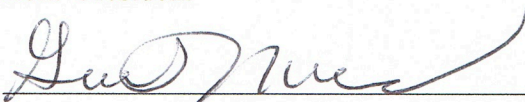
**NOTE**:  Submission letter to be included separately.

# Section VII.  Signature Page

The foregoing application is submitted on behalf of Carolina STEM Academy and its non-profit corporation, The Academy of the Carolinas, Inc.  The undersigned has read the application and hereby declares that the information contained in it is true and accurate to the best of his/her information and belief.  The undersigned further represents that the applicant has read the Charter School Law and agrees to be governed by it, other applicable laws, and SBE regulations.

Print/Type Name:  Giuliano Macri

Board Position:  President

Signature: _~~Giu Macri~~_____      Date: 2-25-13

Sworn to and subscribed before me this

25th day of February, 20 13 .

_Dianne C. Eller_

Notary Public                          Official Seal

My commission expires: Sept. 19, 20 15 .