

U.S. Department of Education
2022 National Blue Ribbon Schools Program

[X] Public or [] Non-public

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

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

Official School Name School of Science and Engineering
(As it should appear in the official records)

School Mailing Address 1201 E. Eighth Street
(If address is P.O. Box, also include street address.)

City Dallas State TX Zip Code+4 (9 digits total) 75203-2545

County Dallas County

Telephone (972) 925-5960 Fax _____

Web site/URL https://www.dallasisd.org/semagnet E-mail arodriguez@dallasisd.org

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

(Principal's Signature) Date _____

Name of Superintendent* Dr. Stephanie Elizalde E-mail selizalde@dallasisd.org
(Specify: Ms., Miss, Mrs., Dr., Mr., Other)

District Name Dallas Independent School District Tel. (972) 925-3700

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

(Superintendent's Signature) Date _____

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

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

(School Board President's/Chairperson's Signature) Date _____

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

**Non-public Schools: If the information requested is not applicable, leave blank.*

PART I – ELIGIBILITY CERTIFICATION

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

1. All nominated public schools must meet the state’s performance targets in reading (or English language arts) and mathematics and other academic indicators (i.e., attendance rate and graduation rate), for the all students group, including having participation rates of at least 95 percent using the most recent accountability results available for nomination.
2. To meet final eligibility, all nominated public schools must be certified by states prior to September 2021 in order to meet all eligibility requirements. Any status appeals must be resolved at least two weeks before the awards ceremony for the school to receive the award.
3. The school configuration must include one or more of grades K-12. Schools located on the same campus (physical location and mailing address) must apply as an entire school (i.e. K-8; 6-12; K-12 school). Two (or more) schools located on separate campuses, must apply individually even if they have the same principal. A single school located on multiple campuses with one principal must apply as an entire school.
4. The school has been in existence for five full years, that is, from at least September 2016 and each tested grade must have been part of the school for the past three years.
5. The nominated school has not received the National Blue Ribbon Schools award in the past five years: 2017, 2018, 2019, 2020 or 2021.
6. The nominated school has no history of testing irregularities, nor have charges of irregularities been brought against the school at the time of nomination. If irregularities are later discovered and proven by the state, the U.S. Department of Education reserves the right to disqualify a school’s application and/or rescind a school’s award.
7. The nominated school has not been identified by the state as “persistently dangerous” within the last two years.
8. The nominated school or district is not refusing Office of Civil Rights (OCR) access to information necessary to investigate a civil rights complaint or to conduct a district-wide compliance review.
9. The OCR has not issued a violation letter of findings to the school district concluding that the nominated school or the district as a whole has violated one or more of the civil rights statutes. A violation letter of findings will not be considered outstanding if OCR has accepted a corrective action plan from the district to remedy the violation.
10. The U.S. Department of Justice does not have a pending suit alleging that the nominated school or the school district, as a whole, has violated one or more of the civil rights statutes or the Constitution’s equal protection clause.
11. The nominated school has, or is subject to, a nondiscrimination policy (provide either a link to the policy or submit a text of the policy), is committed to equal opportunity for all students and all staff consistent with applicable law and does not have any outstanding findings of unlawful discrimination. The U.S. Department of Education reserves the right to disqualify a school’s nomination and/or rescind a school’s award if unlawful discrimination is later discovered.

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

The U.S. Department of Education reserves the right to disqualify a school's nomination and/or rescind a school's award if one of these eligibility requirements is later discovered to have not been met or otherwise been violated.

PART II - DEMOGRAPHIC DATA

Data should be provided for the current school year (2021-2022) unless otherwise stated.

DISTRICT (Question 1 is not applicable to non-public schools. For charter schools: If a charter school is part of the public school system, information should be provided for the public school district. If a charter school is considered its own district or part of a charter district, the information provided should reflect that.)

- Number of schools in the district (per district designation):
 - 153 Elementary schools (includes K-8)
 - 37 Middle/Junior high schools
 - 38 High schools
 - 4 K-12 schools

232 TOTAL

SCHOOL (To be completed by all schools. **Only include demographic data for the nominated school, not for the district.**)

- Category that best describes the area where the school is located. If unsure, refer to NCES database for correct category: <https://nces.ed.gov/ccd/schoolsearch/> (Find your school and check “Locale”)

- Urban (city or town)
 Suburban
 Rural

- Number of students in the school as of October 1, 2021 enrolled at each grade level or its equivalent at the school. Include all students enrolled, in-person, participating in a hybrid model, or online only. If online schooling or other COVID-19 school issues make this difficult to obtain, provide the most accurate and up-to-date information available:

Grade	# of Males	# of Females	Grade Total
PreK	0	0	0
K	0	0	0
1	0	0	0
2	0	0	0
3	0	0	0
4	0	0	0
5	0	0	0
6	0	0	0
7	0	0	0
8	0	0	0
9	88	33	121
10	86	23	109
11	74	32	106
12 or higher	111	52	163
Total Students	359	140	499

*Schools that house PreK programs should count preschool students **only** if the school administration is responsible for the program.

4. Racial/ethnic composition of the school (if unknown, estimate):
- 0 % American Indian or Alaska Native
 - 11.6 % Asian
 - 9.1 % Black or African American
 - 65.3 % Hispanic or Latino
 - 0 % Native Hawaiian or Other Pacific Islander
 - 11.4 % White
 - 2.6 % Two or more races
 - 100 % Total**

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

5. Student turnover, or mobility rate, during the 2020 - 2021 school year: ≤1%

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

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

Steps For Determining Mobility Rate	Answer
(1) Number of students who transferred <i>to</i> the school after October 1, 2020 until the end of the 2020-2021 school year	0
(2) Number of students who transferred <i>from</i> the school after October 1, 2020 until the end of the 2020-2021 school year	0
(3) Total of all transferred students [sum of rows (1) and (2)]	0
(4) Total number of students in the school as of October 1, 2020	0
(5) Total transferred students in row (3) divided by total students in row (4)	<.01
(6) Amount in row (5) multiplied by 100	<1

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

Spanish, Arabic, Amharic, Nepalese, Tamil, French, Thai, Hindi, Korean, Vietnamese, Chinese, Russian, American Indian

English Language Learners (ELL) in the school: 25 %
124 Total number ELL

7. Students eligible for free/reduced-priced meals: 100 %

Total number students who qualify: 499

8. Students receiving special education services with an IEP or 504: 3 %
14 Total number of students served

Indicate below the number of students with disabilities according to conditions designated in the Individuals with Disabilities Education Act. Do not add additional conditions. All students receiving special education services with an IEP or 504 should be reflected in the table below. It is possible that students may be classified in more than one condition.

- | | |
|----------------------------------|------------------------------------------------|
| <u>8</u> Autism | <u>0</u> Multiple Disabilities |
| <u>0</u> Deafness | <u>0</u> Orthopedic Impairment |
| <u>0</u> Deaf-Blindness | <u>3</u> Other Health Impaired |
| <u>0</u> Developmental Delay | <u>1</u> Specific Learning Disability |
| <u>3</u> Emotional Disturbance | <u>2</u> Speech or Language Impairment |
| <u>3</u> Hearing Impairment | <u>0</u> Traumatic Brain Injury |
| <u>0</u> Intellectual Disability | <u>0</u> Visual Impairment Including Blindness |

9. Number of years the principal has been in her/his position at this school: 5
10. Use Full-Time Equivalents (FTEs), rounded to the nearest whole numeral, to indicate the number of school staff in each of the categories below. If your current staffing structure has shifted due to COVID-19 impacts and you are uncertain or unable to determine FTEs, provide an estimate.

	Number of Staff
Administrators	3
Classroom teachers, including those teaching high school specialty subjects, e.g., third grade teacher, history teacher, algebra teacher.	27
Resource teachers/specialists/coaches e.g., reading specialist, science coach, special education teacher, technology specialist, art teacher etc.	5
Paraprofessionals under the supervision of a professional supporting single, group, or classroom students.	4
Student support personnel e.g., school counselors, behavior interventionists, mental/physical health service providers, psychologists, family engagement liaisons, career/college attainment coaches, etc.	1

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

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

Required Information	2020-2021	2019-2020	2018-2019	2017-2018	2016-2017
Daily student attendance	98%	99%	98%	99%	98%
High school graduation rate	99%	99%	99%	99%	99%

13. **For high schools only, that is, schools ending in grade 12 or higher.**

Show percentages to indicate the post-secondary status of students who graduated in Spring 2021.

Post-Secondary Status	
Graduating class size	107
Enrolled in a 4-year college or university	98%
Enrolled in a community college	2%
Enrolled in career/technical training program	0%
Found employment	0%
Joined the military or other public service	0%
Other	0%

14. Indicate whether your school has previously received a National Blue Ribbon Schools award.

Yes No

If yes, select the year in which your school received the award. 2011

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

To build students with the knowledge, skill, character, and love of learning to be globally competitive in STEM fields.

16. Provide a URL link to or text of the school’s nondiscrimination policy.

<https://www.dallasisd.org/Page/71877#:~:text=Dallas%20ISD%20prohibits%20discrimination%2C%20including,other%20basis%20prohibited%20by%20law>

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

Online applications are made available beginning November through January. Applicants who meet the minimum GPA and test score requirements are eligible to move forward to the next round, an on-campus assessment process. The number of seats available is identified by district policy before the application process begins.

PART III – SCHOOL OVERVIEW

The School of Science and Engineering Magnet High School (SEM) opened in the fall of 1982 with students commuting from their neighborhood high schools to attend SEM on a part-time basis. The Dallas Independent School District (DISD) created this Magnet specifically to prepare students for higher education and careers in science, computer science, mathematics, and engineering. The school became full time in the fall of 1994 and moved to the new Yvonne A. Ewell Townview Magnet Center (YAETMC) in 1995.

The school offers a variety of courses designed to allow students to acquire the necessary skills required to compete globally in the areas of science and engineering. Dallas ISD has capped the total enrollment for SEM students at 500. SEM's current student body is made up of 65% Hispanic, 9% African American, 11% White, and 11% Asian/Native American/other. The school district identifies 51% of SEM's students as "economically disadvantaged." The faculty constantly challenges students to strive for excellence both academically and socially while providing encouragement and support. While it does not have an organized sports program, students participate in mandatory PE for one year and many participate in marching band or sports through other schools.

SEM's curriculum prepares all students to excel in Advanced Placement (AP) courses, problem-solving skills, and extensive subject knowledge. SEM's extracurricular teams succeed in competitions at the state, national, and international levels. Teachers augment their education each year by attending AP workshops, engineering camps and vertical team meetings. Since the 1996-97 school year, SEM has earned the Texas Education Agency's highest rating, through several changes in the statewide evaluation system and rising state standards. The students' accomplishments demonstrate their belief in SEM's motto: This is a school where the possibilities are endless.

A sense of "family" pervades the relationships among SEM's students and faculty, both in the classroom and in extracurricular activities. The students exert a positive peer pressure on one another. There is a mutually supportive spirit focused on continuing SEM's stunning record of group success on AP Exams. The small size and niche focus mean that most students take the same classes from the same teachers as their peers: that shared experience of rigorous academic expectations means groups of students collaboratively engage with their education in the cafeteria, in the hallways, and before school. Spontaneous study groups, both in school and in virtual environments, form. Teachers connect in a more authentic way with their students, because they are the same groupings year after year, class after class: a student doesn't merely pass through a teacher's classroom one time: specific teachers will be part of a student's educational journey from start to finish.

One of the most distinct aspects of SEM is the college-going culture, which pervades every aspect of a student's experience. The majority of students will be first-generation college students; a sizable portion will be the first generation to graduate from high school, or even attend high school. As a college preparatory program, the mission is to help all students successfully transition into college and professional careers despite a lack of generational support to help them. The school takes a holistic approach to this process, educating the whole family, and deliberately addressing all aspects of the process from the very beginning. The administration hosts twice-yearly mandatory parent meetings by grade level in order to educate families on where their students should be in the process of developing an academic and personal profile that will attract acceptances (and funding) from highly selective colleges and universities. Information sessions on the college application process are integrated into academic classes all four years, ensuring students are informed participants in the process.

This process has yielded wonderful results: in the last six years, over 90% of SEM students have enrolled in a 4-year college in the fall after graduation. For the past several years, the graduating senior class of around 100 students has earned over \$20 million in scholarships. Signing Day, in May, is one of the school's most important events, where one can see students celebrating their commitment to schools such as MIT, Harvard, Stanford, and many, many others.

SEM is a different world. The students share a passion for success, and have a strong focus on the STEM pathway. Although COVID has had its inevitable impact, generally 100% of SEM students pass the AP Calculus exam, most by the end of their sophomore year. Aside from the fact that that is clearly impressive, it also changes a place when everyone, quite literally, knows calculus, where you can make a calculus joke and everyone laughs. It's a whole new mood when loving math and science are normalized, and where high expectations are shared expectations. There's a zing, a joyful geekiness, to the students, the teachers, and the community that transforms the educational landscape and creates endless possibilities for all.

PART IV – CURRICULUM AND INSTRUCTION

1. Core Curriculum, Instruction, and Assessment.

1a. Overall approach, which may include overarching philosophy or approaches common across subject areas:

The School of Science and Engineering focuses on evidence-based best practices to help students efficiently achieve excellence across all academic disciplines. The curriculum is structured around the College Board's AP program: as a college-preparatory program, the goal is to provide students, especially first-generation college students, with the foundational skills to be successful in college. The AP program is both highly rigorous and carefully aligned with the expectations for a first-year college student in any institution in the country.

Teachers at SEM take a collaborative approach to education, from lab groups to study partners and discussion circles. Teachers seek to capitalize on the energy and positive peer pressure that comes from mutual high expectations. There is a focus on authentic learning: students are encouraged to complete test corrections and revise essays, rather than treat mistakes as irrevocable.

One distinctive feature of the curriculum is a willingness to speed up--or slow down--to ensure every student can be successful. For example, rather than divide students into AP and Honors Physics, the school offers single and double-blocked classes, so that all students complete the same material in a year, but with different amounts of in-class support; on the other extreme, the school offers a Freshman Calculus course that moves very quickly.

The effectiveness of this curriculum is demonstrated best in the College Persistence Data. For the last six years, over 90% of SEM students who enrolled in college after high school returned to college for their sophomore year.

During the 2021-2022 school year, the school population was almost entirely remote. Instruction was via synchronous classes and on-line learning platforms. This year, to address learning loss the school is utilizing tutoring and a restructuring of the scope and sequence of key courses, spiraling in additional review to shore up weak areas.

1b. Reading/English language arts curriculum content, instruction, and assessment:

The SEM English Language Arts (ELA) curriculum is designed to ensure that all students are prepared for a rigorous college education and professional success in a STEM field. The program focuses on developing the sort of reading and writing skills needed to thrive in a technical environment, including reading academic texts and producing cited, researched arguments. During 2020-2021, teachers used online management systems and held class remotely; after returning to school in person, they have continued to rely more on digital versions of texts and electronic submission of written assignments.

All SEM students complete both Freshman and Sophomore English in their first year. Students enter the program with wildly disparate ELA skills: a quarter of SEM students speak English as a second language, and while most have been exited from formal English Language Learner supports, there are often skill gaps regarding academic reading and writing. SEM students also generally come from fifteen or more different middle schools, where they have had a wide variety of approaches to English education. Enrolling all students in two English courses Freshman year creates an immersive, consistent experience that ensures all students receive strong instruction across the board. In their second year, SEM students take several non-ELA courses that have a significant writing component, including AP World History and AP Physics 1 (Conceptual Physics). The Freshman program is designed to ensure all students are prepared for those courses.

Sophomore year, students take AP Seminar. This course is interdisciplinary, with a focus on the research

skills needed across academic disciplines. Students complete college-level research and present their findings in the form of presentations and academic papers. It is highly aligned with the research skills and format they will need to complete upper-level college coursework. This is the third year of the program; in the first two years, over 75% of students received a “qualified” rating from College Board. Students have the option to later enroll in AP Research. This elective course builds on the skills of AP Seminar and supports students through the process of completing a large independent research project. AP Seminar and AP Research are important steps towards earning an AP Capstone diploma.

Junior and Senior year, students take AP English Language and Composition and AP English Literature. The first emphasizes the skills of close-reading non-fiction and the second teaches students to analyze novels, plays, and poetry. Both courses are writing-intensive. In addition to preparing students for the AP exams, these classes are part of the college access process: during junior year, SAT test preparation is integrated into the AP Language curriculum, leveraging skill overlap between the Evidence-based reading section of the SAT and AP Language curriculum. Students also begin the process of drafting college essays. During senior year, the English class includes a unit on polishing college essays, completing supplemental essays, and serves as a distribution hub of information about the college process. ELA teachers have sought out extensive professional development on the issue of college-access and work carefully with the counseling department to ensure that students are supported.

1c. Mathematics curriculum content, instruction, and assessment:

The school’s mission is to provide students a rigorous academic and technical program relating to the sciences and engineering. The rigors of this program require students to master the state required essential skills and knowledge before progressing to advanced math courses. Using the AP math curriculum, the mathematics program at the SEM prepares students for the rigors of college-level work. Course offerings include Honors Geometry, Honors Algebra II, Honors Pre-Calculus, AP Calculus AB, AP Calculus BC, AP Statistics, and Advanced Topics of the Theory of Applied Mathematics (ATTAM).

All students take Honors Geometry during their freshman year along with one to three additional math classes depending on their math track placement. The majority of freshmen students are enrolled in the Fast Track math program, enabling them to complete Honors Algebra II and Honors Pre-Calculus in one year. Most of these students are then able to successfully complete AP Calculus AB during their sophomore year and AP Calculus BC during their junior year. A smaller group of freshmen students are enrolled in the Freshmen Calculus program. Students enrolled in this program will complete Honors Algebra II, Honors Pre-Calculus, AP Calculus AB during their freshman year. Students who are not ready for the Fast Track or Freshman Calculus math programs are enrolled in Honors Algebra II their freshman year and continue taking Honors and AP math courses successfully completing AP Calculus BC their senior year. All students will complete AP Calculus BC before graduating.

In addition to completing the equivalent of the first two college calculus courses, all students take AP Statistics. About 40% of students also take ATTAM, a post-calculus course that teaches the fundamentals of linear algebra, differential equations, multivariable calculus, and discrete mathematics as well as financial literacy. Teachers ensure that students are taught real world applications of mathematics throughout their mathematics sequence.

Instruction in the math department is data driven with frequent checks for understanding throughout the class and daily quizzes that inform instructional decisions. Before- and after-school tutoring, peer tutoring, required independent study periods for students in AP Calculus AB, and Saturday math preparation sessions all help to prepare students for success on the AP Calculus exams in May. Students are also encouraged to reflect on their learning by completing test corrections for all summative assessments. The curriculum and instructional techniques of SEM’s Math Department has resulted in 90% or greater of the students receiving a score of 3 or better on the AP Calculus AB exam from 2014-2019.

During COVID-19, instruction was primarily remote which required teachers to turn to technology to ensure students were learning the necessary material. Teachers utilized technologies that included cloud-based learning management systems, online applications for formative assessments throughout instruction, and a

web-based advanced graphing calculator and math activities program. Many teachers have continued the use of these programs in their classrooms even after returning to in person learning. Several faculty members in the math department used a flipped teaching model during remote teaching in their classrooms to support student learning.

1d. Science curriculum content, instruction, and assessment:

Science course offerings include: Honors Biology, AP Biology, Anatomy and Physiology, Honors Chemistry, AP Chemistry, AP Environmental Science, and four years of AP Physics. By the end of sophomore year, students have completed Honors and AP classes in Physics, Biology, and Chemistry. This accelerated foundation allows students to thrive in the most rigorous science classes. Approximately half of juniors enroll in the Super Class program: they complete AP Chemistry, AP Physics C: Mechanics, and a College-level laboratory class. This laboratory experience provides students with many more hours of hands-on laboratory experience than is typical in this course. In addition to helping students prepare for the AP exams, this increases their teamwork, data analysis, and argumentation skills. Students completing the Super Class program enroll in AP Physics C: Electricity and Magnetism their senior year, setting them up to move directly into the most rigorous science courses in college.

Students that do not enroll in the Super Class program select from other advanced courses in both life and physical sciences to prepare them for college. The results of this curriculum are shown by the success SEM students' have had in the technology, engineering, medical, and science fields at major colleges and universities. Most SEM students complete 6-8 full-year science courses prior to graduation.

The Science Department's instruction is data driven with teachers utilizing technologies for formative assessments to increase student engagement and assess student understanding. Students are encouraged to reflect on their learning by completing test corrections for summative assessments. During the 2021-2022 academic year, a remote learning environment was implemented to complete labs virtually. Teachers utilized technology more in the classroom including online applications for formative assessments and cloud-based management learning systems. Teachers have continued the use of these systems in their classrooms despite a return to in person instruction.

1e. Social studies/history/civic learning curriculum content, instruction, and assessment:

SEM's social studies curriculum consists exclusively of Advanced Placement courses to prepare students for college. Freshmen take AP Human Geography, sophomores study AP World History, juniors take AP US History, and seniors take AP Macroeconomics and AP US Government. These courses use contemporary case studies, primary source analysis, and real world data to hone students' analytical skills. Teachers select material that conveys the perspective of multiple social groups, including different economic classes, racial and ethnic groups, and gender groups. This approach reinforces cultural awareness while building critical reading skills like identifying purpose and tone in writing.

All teachers use data to drive instruction. Each unit ends with a progress check of simulated AP questions to guide test preparation and identify students needing remediation. Throughout each unit, teachers move through a sequence of vocabulary quizzes to test baseline knowledge and free response essay practice to identify gaps in analytical skills. Throughout this process, teachers use small group in-class tutoring to help students bridge knowledge gaps. Students who fail tests are assigned before and after school tutoring, during which they analyze why they selected distractor answers and how they can improve their writing. These students can retest, so that their grades can be updated to reflect their mastery of the content.

Virtual learning during COVID-19 enhanced teachers' use of classroom technology. All students received district laptops, which opens new avenues of instruction. For example, rather than looking at a printed map of census data, students can use the interactive census website to view maps that show the ethnic composition of the United States on a state, city, and zip code level. These tools enhance student engagement by allowing students to find data specific to their home. In addition, Interactive presentation tools provide continuous data from polls and quiz questions, so teachers can immediately clarify misunderstandings.

1f. For secondary schools:

SEM is a college preparatory program. The coursework, college application workshops, and parent workshops ensure that every student will be admitted to an academically rigorous college they can afford. College preparation begins freshman year, when all students take AP Human Geography, and qualified students take AP Biology and AP Calculus. By sophomore year, all students are enrolled in at least three AP courses. Most students graduate from SEM having completed over 15 AP courses. This is a powerful testament to selective universities that students will be able to complete their rigorous coursework.

Freshman student and parent workshops emphasize the importance of extracurricular activities for successful college applications. Students receive a spreadsheet of all available clubs at SEM, and instructions for creating new clubs. SEM collects club rosters to ensure that each student participates in at least one activity. Sophomore year, students develop test preparation skills with free PSAT and ACT exams. Junior teachers use their scores to create test preparation workshops in math and English classes. These school-administered exams are particularly vital in a Title I school, as they ensure that students from all economic backgrounds are able to test.

Students' junior English final is to complete an autobiography to develop topics for college essays and guide teachers' recommendation letters. The school offers a summer college application boot camp before senior year. Over half of SEM students are the first in their families to attend college, so this camp supplies support unavailable at home. Seniors partner with a mentor teacher and an on-campus college advisor to finish their applications. Over the last four years, over 95% of SEM students have enrolled in college the Fall after graduation; on average, over \$20 million in scholarship funds were awarded to each senior class.

1g. For schools that offer preschool for three- and/or four-year old students:

2. Other Curriculum Areas:

All curriculum areas at SEM are designed to further prepare students for a rigorous college education in a STEM field. Texas state standards are reinforced for all students through mandatory CATE classes and dynamic library/media center. Optional advisory time ensures that students who are struggling with state standards have the time and support to remediate skill gaps.

The CATE program at SEM is a critical element in advancing STEM education for all students. Students have the opportunity to acquire a foundation in engineering and computer science. Starting in the 9th grade year, all students take Introduction to Engineering Design, a course designed to develop an engineering mindset. The course introduces students to the engineering design process and supports student's early acquisition of math, science, and engineering standards to identify and design solutions to a variety of real problems. In the 10th grade year, all students take AP Computer Science Principles, an introductory college-level computing course where students learn to design and evaluate solutions and to apply computer science to solve problems through the development of algorithms and programs. During their 11th grade year, students take AP Computer Science A. In this course, students get familiar with concepts and tools of computer science while learning a subset of the Java programming language. Students do hands-on work to design, write, and test computer programs that solve problems or accomplish tasks. During their 12th grade year, students can opt to take Robotics or a Data Structures class.

Our school library, shared among six schools located on our campus, was recently approved for a redesign. The approved design includes a STEM starter center, creative studio, and Cowork/Collab Tech. The library currently functions as a dynamic place where students can host special events, meets, and programs sponsored by on-campus and off-campus leaders. During the school day, students and teachers use the library for other curriculum programs such as class research workshops, character building activities, SEL symposium, business partnership finance literacy workshops, teen leadership board, and podcast club. It's also a place where students can come and read, meet with friends, conduct virtual appointments, do independent study, or robotics trials.

The School of Science and Engineering also provides students the opportunity to engage in non STEM related curriculum. Students are able to take Choir or Band. All students must complete two years of a foreign language, a fine art, and a year of Physical Education as high school graduation requirements. Through a partnership with sister-schools, students can take advanced courses in a variety of subjects, and play on sports teams at their zoned campus.

SEM also offers an optional advisory sections for students who are struggling academically: this is a way to ensure that all students are able to take the same advanced coursework at the same pace as their peers; by building extra time into the school day for students to have structured academic support, they are able to remediate any skill gaps they have without falling behind. All students also have socio-emotional support and advisory lessons throughout the year integrated into academic classes.

3. Academic Supports

3a. Students performing below grade level:

SEM conceptualizes “below grade level” students as strong learners who have developed skill gaps, and structure their program to address those skill gaps while allowing students to still participate in the full range of academic opportunities offered at the school.

In math, this begins before students are even formally enrolled: SEM offers a 3-week summer “Algebra Camp” and invites students who scored below a certain threshold on the entrance assessment to attend. There, a master Algebra 1 teacher takes them through the entire curriculum, addressing misconceptions and holes in their understanding as they go. Many, many problems are simply snipped in the bud in Algebra camp. Freshman year, the program continues to focus on addressing weaknesses in math, as it is central to the rest of the program. Students who have persistent skill gaps even after Algebra Camp, or who were not able to attend, get placed into a double-blocked Algebra 2 class. With twice as much class time as generally given, those students have the opportunity for extra practice and attention to ensure that they have the foundation they need for pre-calculus. This is not a track: students who are placed in the double-blocks Algebra 2 still have the opportunity to take the full set of math classes offered, including a post-AP math class.

This worked so well in math that it was applied a similar strategy for the very challenging course, AP Physics 1, which all SEM students take as sophomores. Fifteen to twenty-five students typically struggled significantly, due to a lack of middle-school preparation. Rather than creating a less rigorous Physics option for them, SEM doubled their time in the same course, giving them more instruction and more opportunities to practice. This keeps them on track to take the most advanced Calculus based physics courses junior and senior year.

3b. Students performing above grade level:

SEM offers rigorous Honors and AP courses for all its students. However, for its above level students programs such as the Freshmen Calculus program and the Super Class program offer additional challenges and opportunities for growth. The ATTAM course is also offered for above level students as a way to extend their math knowledge well beyond a normal high school curriculum. SEM also offers students numerous extracurricular opportunities to reach their full potential. Each year students, supported by SEM teachers, study to participate in competitions such as the Biology Olympiad, Chemistry Olympiad, Physics Olympiad, the American Mathematics Competition (AMC), and the American Invitational Mathematics Examination (AIME). All of these competitions require content knowledge outside of even the most advanced high school curriculums and SEM teachers work to support students as they study for these rigorous and challenging examinations. SEM students also work on individual research projects with SEM teachers serving as mentors. Several SEM students have proposed research projects for the Environmental Education Initiative with the City of Dallas and have been awarded funds to develop their research alongside their teacher. Other students have participated in the Young Women in Science and Engineering Investigators (YWISEI) program at University of Texas at Dallas. In this program, students complete a 9-month STEM-

based project under the guidance of their SEM teacher with college students, faculty, industry scientists, or engineers serving as mentors. In addition to encouraging students to complete independent research projects, SEM has also partnered with the University of Texas at Dallas to provide research presentations by professors from a variety of fields to expose students to upper level research topics. SEM's award winning robotics club provides above level students with opportunities to increase their content knowledge, problem solving, and teamwork skills.

3c. Special education:

SEM provides 2.9% of its students with special education services for autism, dyslexia, attention deficit-hyperactivity disorder, and other medical conditions that create learning differences. Each student has an Individual Education Plan (IEP) or 504 plan to ensure their educational needs are met. The number of students in need of support has increased during the COVID-19 pandemic, and the school added a second special education professional to the SEM staff to meet these needs. Special education teachers coordinate annual admission, review, and dismissal meetings to evaluate the effectiveness of the IEP and add or adjust accommodations to ensure the student will learn the skills necessary to attend college. Teachers attend these meetings to share the students' academic progress, learn about the students' needs, and advocate for changes that can help the student be more successful.

Students served by 504 and IEP plans receive a variety of supports. These include classroom accommodations such as extended time on tests and assignments, preferential seating, and biweekly meetings with the school counselor to build effective academic habits. SEM also coordinates additional specialized services through the district, such as speech therapy to support students with autism, and a deaf education teacher for students with hearing loss.

Students served by 504 and IEP plans are monitored in several ways. For example, teachers use data trackers to record how accommodations are implemented, and to assess how interventions like speech therapy are helping students succeed in the classroom. These results are shared in biweekly grade level meetings, where teachers can exchange best practices for supporting students' needs and advocate for additional support for students if needed. Teachers also receive annual training in how to implement IEP and 504 plans, with special focus on unique needs, such as deaf education.

3d. English Language Learners, if a special program or intervention is offered:

SEM supports 124 English language learners (ELL), approximately twenty-five percent of the student body. The needs of SEM's ELL population grew during the covid-19 pandemic. Virtual instruction combined with lockdowns meant that these students had fewer opportunities to practice their English skills.

To support this population, SEM combines district-level interventions with classroom-level interventions. Students identified as ELL take the Texas English Language Proficiency Assessment System (TELPAS) exam, which assesses their proficiency in speaking, listening, reading and writing. In early spring, SEM collects a writing portfolio completed across all core subject areas. This portfolio assesses student writing skills in a variety of domains, including narrative writing, academic vocabulary, and use of past, present, and future tense. Based on the TELPAS scores and writing portfolios, students are either exited or retained in the ELL program. Students who are retained are monitored throughout the year by the ELL coordinator, who provides faculty-wide training and support for individual teachers.

The majority of SEM's ELL population scores in the advanced or high advanced category of TELPAS, so classroom support focuses on improving academic vocabulary. In professional development, teachers learned to use pictures and other visual aids in presentations to assist students with interpreting unfamiliar vocabulary. Teachers use a variety of tools to assist ELL students with vocabulary retention. For example, students may keep study journals that include a word, a definition, an example and a non-example. Other common classroom exercises include categorizing vocabulary words to build connections across academic content.

ELL students who need additional support are identified in SEM's weekly grade level meetings.

Interventions include one-on-one tutoring times or regular teacher mentoring. The ninth grade geometry class offers materials in both English and Spanish so that all students can learn foundational math skills. Finally, the district provides translation services in multiple languages so that all parents can be part of their students' education.

3e. Other populations (e.g., migrant, homeless), if a special program or intervention is offered:

PART V – SCHOOL CLIMATE AND CULTURE

1. Engaging Students:

At SEM, student engagement encompasses the whole student, from leveraging extracurricular experiences to develop academic skills to ensuring that the socio-emotional needs of all students are met. The SEM experience starts with a week-long camp for incoming Freshmen: because SEM students come from all over the city and over a dozen middle schools, SEM builds in opportunities for them to form social bonds before school even starts, so that their first day of school feels like coming home. The school offers a range of extracurricular activities to encourage on-going social and emotional growth.

SEM students clamor for competition, and the school strives to make sure there is an opportunity for all students to explore their interests in a competitive environment. In the STEM field, SEM fields teams for state-wide math and science competitions, including multiple state-wide math competitions and local events such as the Calculus Bowl. SEM students participate in Physics and Chemistry Olympiads and engineering competitions such as YWISE. The school always has at least one Robotics team, and sometimes more; as many as a quarter of SEM students sit for the prestigious AMC exam at least once in their high school career, and in a typical year several advance to the highly selective AIME exam. To encourage students to explore interests beyond STEM, SEM participates in contests such as Academic Decathlon, Mock Trial, and University Interscholastic League Social Studies and Journalism.

But not all students are competitive, and even the most competitive students benefit from other modes of interaction. SEM, working with the PTSA and a collaborative partnership with the local recreation center, hosts monthly socials, which are largely unstructured time at a nearby park. Socials are attended by over half of the student population. SEM has an active student council and National Honor Society. The school also hosts active chapters of the professional organizations for people of color in Engineering (NSBE/SHPE). SEM also fosters opportunities for informal student engagement, from a semi-illicit ping-pong table to study nooks placed in the back of classrooms.

The pandemic had a significant impact on these traditions: 90% of SEM students were remote for the 2020-2021 school year, and this year has been one of rebuilding and growth. The socials were implemented to get “back in the groove” and have been a great success. As the year has progressed, the previous energy has built back up and the faculty and students are excited to see engagement grow each day.

2. Engaging Families and Community:

The School of Science and Engineering engages with family and community in a variety of ways. There is an active PTSA, who function to organize events throughout the year, from helping plan new student orientation for incoming 8th graders to helping plan and supervise senior trips and prom. There are parent/family meetings in the fall and spring by grade level to convey information about academics, college access, and upcoming events. The Site-Based Decision Making Committee, made up of teachers, administrators, parents, and community members, meets monthly to discuss pertinent issues and makes recommendations to the principal.

SEM partners with several local firms and Universities to provide opportunities for internships and engagement. Abbott Laboratories holds a minimum of two internship slots for SEM students in their prestigious program. The University of Texas at Dallas coordinates with the school to host interest nights regarding careers in the sciences and provides application support for their Academic Bridge Program for incoming college freshmen. The school partners with the National Society of Black Engineers and the Society of Hispanic Professional Engineers to provide students with mentors and opportunities for internships. SEM shares a full-time community liaison with other schools on the campus: the community liaison designs parental and community programs geared toward increasing engagement and involvement. The community liaison utilizes digital platforms to communicate newsletters, memos, volunteer opportunities, community donations, and business partner connections, including the Dallas Mayor’s Internship program. The school partners with Academic Success Program (ASP) to provide additional

college counseling services for students; ASP representatives are on campus daily to provide on-going support for our students.

A number of student clubs and organizations encourage community outreach: the National Honor Society and Girls for Change engage in a variety of community service projects for the community. During the pandemic, several students coordinated a program to deliver hygiene products to the homeless population of Dallas. The Student Council plans community events each year, including Signing Day, a celebration of college acceptances. As part of an on-going partnership with the Eloise Lundy Recreation Center, part of the City of Dallas, SEM students provided after school tutoring services to students in the community. The partnership with the Eloise Lundy Recreation Center has also led to multiple family social nights, which have been a critical part of the Post-pandemic plan to reestablish bonds both within the school community and with the wider community.

3. Creating Professional Culture:

SEM builds professional culture among a highly educated faculty through school-based trainings, College Board professional development workshops, and teacher-led initiatives. The faculty far exceeds district and state minimum staff development requirements and 42.3% have advanced degrees. All faculty members at the School of Science and Engineering attend state and national AP and Pre-AP workshops. These one-week training sessions enhance content knowledge and allow teachers to learn new techniques from a peer group that spans the state and nation. Many faculty members are AP readers and even AP question leaders. This gives teachers an in-depth understanding of their content, the AP exam, and enhances their student learning experience. Within the school, teachers participate in grade level teams and subject-based professional learning communities (PLCs). PLCs examine data from AP exams and state achievement tests to set performance goals and align instructional practices across the department. Grade level teams identify and conduct interventions on high-need students. Teachers collaborate to find strategies that work for individual students who are struggling. As a result, both teachers and students receive support solving classroom problems.

Additional supports include teacher-created professional development groups and book clubs. For example, a group of eight teachers founded a trauma-informed teaching study group that later presented two professional development workshops to the whole faculty. These informal groups empower teachers to identify their most pressing classroom needs and work together to solve them. Further support comes from the Parent Teacher Student Association (PTSA). This organization provides financial support for classroom initiatives that the district budget may not cover, such as ordering extra copies of high-interest novels or professional development resources. This funding helps teachers feel supported because it ensures that finances are not a barrier to innovative teaching. The PTSA also supports teachers by catering holiday meals and planning monthly social events that help teachers, students, and parents connect. These efforts create an environment where teachers feel valued by the whole school community.

Data indicates that these measures have created a school culture that supports, celebrates, and creates trust. One of the highest teacher feedback comments has consistently been how valued and supportive they feel among one another. The overall teacher-teacher trust climate survey data for 2022 is 86%. There is a mutually supportive spirit focused on continuing SEM's stunning record of student achievement and success on AP Exams and state standardized exams.

4. School Leadership:

SEM's leadership philosophy is that effective leaders are lifelong learners, and that leadership opportunities should be distributed among all stakeholders. In order to be a lifelong learner, the principal routinely participates in faculty-led professional development initiatives. For example, in the 2021-2022 school year, the principal joined a teacher-led book study group centered on culturally responsive teaching. This initiative was a direct response to nationwide protests for racial justice. The principal also receives regular feedback from the faculty through a district-led climate survey. The administrative team uses this data to continuously learn and innovate to serve the school community better.

To best serve the school community, SEM employs a distributed leadership model. While the principal coordinates schoolwide goal setting, assistant principals provide support with managing student behavior. For example, two assistant principals worked together to create a new tardy response system that ensures students arrive in class on time. Five teachers participate in the Campus Instructional Leadership Team (CILT). Through weekly meetings, CILT manages projects essential to school success, such as annual admissions testing, and trains the faculty on new protocols, such as discussion strategies for grade level team meetings. Together with the principal and counselor, CILT also created materials to guide students through virtual learning, including lessons on mental health and specific strategies for communicating with teachers. Department chairs and CILT also provide leadership in developing a schedule that meets the unique needs of a STEM magnet school. For example, they implemented double blocked courses to provide rich instructional support for tiered students in courses like physics and an accelerated year-long course where students can fast track AP Calculus AB and BC in one year.

To further distribute leadership, the administration created grade level teams. These teams were a direct response to the COVID-19 pandemic. With the vast majority of students learning virtually, CILT recognized the possibility that students would fall through the cracks academically or emotionally. Grade level teams were created to monitor the progress of struggling students and coordinate intervention plans with parents, teachers, the school counselor, and other stakeholders. These teams are led by grade level chairs, most of whom are not members of CILT. An additional level of distributed leadership occurs when the grade level chair designates a specific teacher to manage a particular student's intervention plan. This approach maximizes faculty leadership roles and ensures that all teachers feel they are a vital part of the school's mission.

5. Culturally Responsive Teaching and Learning:

Multiple avenues exist for teachers and students to express their cultural identities, and SEM utilizes multiple data streams to ensure the school serves all students equitably.

District-collected data is disaggregated to identify gaps between racial, gender, and socioeconomic groups. This data includes academic performance data, like state assessment results, and social-emotional learning data, including the Panorama student survey that evaluates both students' mental health and student-teacher relationships. If such gaps are identified, teachers have multiple avenues of support. For example, in the past two years, in response to both current events and student survey data, teachers formed an anti-racism book club to educate themselves on implicit bias and culturally responsive teaching. Teachers who participated in this book club delivered three staff development workshops focused on equitable educational practices, student-teacher relationship building, and using data to ensure an equitable classroom experience.

Many extracurricular activities and school wide initiatives create a school culture that celebrates diversity. Organizations like the Black Student Union and Girls Who Code support students from marginalized groups who want to enter STEM fields like computer science and engineering. In the past two years, students created a Chinese Cultural Club and successfully lobbied for Korean language classes. Additionally, Spark STEM hosted hands-on workshops for middle school girls interested in engineering, while Girls for Change campaigned for a more equitable dress code and collected menstrual products for students in need. Activities like Urban Debate League, University Interscholastic League (UIL) current events, and UIL journalism offer students meaningful opportunities to engage with multiple perspectives on current events.

Within the classroom, teachers routinely engage with multiple perspectives. For example, the AP Human Geography curriculum requires students to learn the core beliefs of the five largest world religions and explore case studies from cultures around the globe. AP US History and AP World History require students to analyze primary source documents written by African-American, Latino, Muslim, and Asian authors. The freshman English curriculum has been expanded to include texts by authors from a variety of cultural backgrounds, while the senior English curriculum includes several "choice projects" that allow students to select novels written by authors from different cultures, genders, and economic classes. All of these efforts ensure that every student from every background will have an opportunity to see themselves in the academic curriculum. At the same time, teaching strategies that promote student discussion and student-directed

learning ensure that students can express themselves, share their identities, and explore current events relevant to the curriculum.

PART VI - STRATEGY FOR ACADEMIC SUCCESS

SEM's grade level meeting protocol addresses the unique challenges students faced with online instruction and the return to in-person learning. Every other week, teachers from each grade level discuss students in need of intervention. The grade level chair uses the weekly failure report from the learning management system to identify students who are failing three or more classes, while teachers may recommend students with behavior or social-emotional concerns. This two-tiered system ensures that students who may be performing well academically while struggling personally are identified. At each meeting, teachers determine whether students are struggling with content mastery, academic habits (such as tracking deadlines and managing time), or social-emotional issues. Then the team creates a customized intervention plan for each student, with one teacher coordinating contact with all stakeholders, including the student, the school counselor, the advisory teacher, and mental health professionals if warranted.

SEM developed this system because the 2020-2021 school year required primarily online instruction due to the COVID-19 pandemic. As students shared limited internet bandwidth with multiple family members, many were unable to turn on their cameras for class. These conditions made monitoring student work significantly more challenging. The number of students failing classes tripled compared to previous years, and the required interventions exceeded what the school counselor could achieve alone. The grade level meetings distributed responsibility equitably among teachers. The results were clear: 14 students were selected by grade level teams for interventions due to failing three or more courses in the first quarter. After interventions were introduced, those 14 students went from failing 55 courses to failing 12 courses by the end of the quarter, a 78% improvement. Last January, 13 seniors were not on track to graduate due to course failures. All 13 seniors graduated on time after grade level team interventions were implemented.

The 2021-2022 school year brought new challenges with students returning to campus for the first time in nearly two years. The redesigned grade level meetings allowed SEM to address both social emotional and academic challenges, as many students experienced trauma during the pandemic that affected their learning and behavior. These interventions have been highly effective. For example, in fall of 2021, the freshman team identified five students in need of intervention for academic or behavioral issues. With a combination of tutoring, parent contact, one-on-one meetings with administration, and referrals to mental health services, all five of these students' grades have improved and behavioral issues have resolved.