

U.S. Department of Education
2017 National Blue Ribbon Schools Program

[X] Public or [] Non-public

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

Name of Principal Dr. Wendy Poffenberger

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

Official School Name California Academy of Mathematics and Science

(As it should appear in the official records)

School Mailing Address 1000 East Victoria Street

(If address is P.O. Box, also include street address.)

City Carson State CA Zip Code+4 (9 digits total) 90747-0001

County Los Angeles

Telephone (310) 243-2025 Fax (310) 516-4041

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

Date _____

(Principal's Signature)

Name of Superintendent*Mr. Christopher Steinhauser E-mail LBetchel@lbschools.net
(Specify: Ms., Miss, Mrs., Dr., Mr., Other)

District Name Long Beach Unified School District Tel. (562) 997-8000

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

Date _____

(Superintendent's Signature)

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

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

Date _____

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

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

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

Part I – Eligibility Certification

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

1. The school configuration includes one or more of grades K-12. (Schools on the same campus with one principal, even a K-12 school, must apply as an entire school.)
2. All nominated public schools must meet the state's performance targets in reading (or English language arts) and mathematics and other academic indicators (i.e., attendance rate and graduation rate), for the all students group and all subgroups, including having participation rates of at least 95 percent using the most recent accountability results available for nomination.
3. To meet final eligibility, all nominated public schools must be certified by states prior to September 2017 in order to meet all eligibility requirements. Any status appeals must be resolved at least two weeks before the awards ceremony for the school to receive the award.
4. If the school includes grades 7 or higher, the school must have foreign language as a part of its curriculum.
5. The school has been in existence for five full years, that is, from at least September 2011 and each tested grade must have been part of the school for the past three years.
6. The nominated school has not received the National Blue Ribbon Schools award in the past five years: 2012, 2013, 2014, 2015, or 2016.
7. The nominated school has no history of testing irregularities, nor have charges of irregularities been brought against the school at the time of nomination. The U.S. Department of Education reserves the right to disqualify a school's application and/or rescind a school's award if irregularities are later discovered and proven by the state.
8. The nominated school has not been identified by the state as "persistently dangerous" within the last two years.
9. The nominated school or district is not refusing Office of Civil Rights (OCR) access to information necessary to investigate a civil rights complaint or to conduct a district-wide compliance review.
10. The OCR has not issued a violation letter of findings to the school district concluding that the nominated school or the district as a whole has violated one or more of the civil rights statutes. A violation letter of findings will not be considered outstanding if OCR has accepted a corrective action plan from the district to remedy the violation.
11. The U.S. Department of Justice does not have a pending suit alleging that the nominated school or the school district as a whole has violated one or more of the civil rights statutes or the Constitution's equal protection clause.
12. There are no findings of violations of the Individuals with Disabilities Education Act in a U.S. Department of Education monitoring report that apply to the school or school district in question; or if there are such findings, the state or district has corrected, or agreed to correct, the findings.

PART II - DEMOGRAPHIC DATA

Data should be provided for the most recent school year (2016-2017) unless otherwise stated.

DISTRICT

1. Number of schools in the district (per district designation):
 - 54 Elementary schools (includes K-8)
 - 15 Middle/Junior high schools
 - 14 High schools
 - 1 K-12 schools

84 TOTAL

SCHOOL (To be completed by all schools)

2. Category that best describes the area where the school is located:
 - Urban or large central city
 - Suburban with characteristics typical of an urban area
 - Suburban
 - Small city or town in a rural area
 - Rural
3. Number of students as of October 1, 2016 enrolled at each grade level or its equivalent in applying school:

Grade	# of Males	# of Females	Grade Total
PreK	0	0	0
K	0	0	0
1	0	0	0
2	0	0	0
3	0	0	0
4	0	0	0
5	0	0	0
6	0	0	0
7	0	0	0
8	0	0	0
9	75	99	174
10	92	79	171
11	94	70	164
12 or higher	89	85	174
Total Students	350	333	683

4. Racial/ethnic composition of the school:
- 1 % American Indian or Alaska Native
 - 30 % Asian
 - 12 % Black or African American
 - 41 % Hispanic or Latino
 - 1 % Native Hawaiian or Other Pacific Islander
 - 7 % White
 - 8 % 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 2015 – 2016 school year: 1%

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, 2015 until the end of the 2015-2016 school year	0
(2) Number of students who transferred <i>from</i> the school after October 1, 2015 until the end of the 2015-2016 school year	5
(3) Total of all transferred students [sum of rows (1) and (2)]	5
(4) Total number of students in the school as of October 1, 2015	683
(5) Total transferred students in row (3) divided by total students in row (4)	0.007
(6) Amount in row (5) multiplied by 100	1

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

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

7. Students eligible for free/reduced-priced meals: 42 %
Total number students who qualify: 290

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

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

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

9. Number of years the principal has been in her/his position at this school: 1
10. Use Full-Time Equivalents (FTEs), rounded to nearest whole numeral, to indicate the number of school staff in each of the categories below:

	Number of Staff
Administrators	2
Classroom teachers including those teaching high school specialty subjects	24
Resource teachers/specialists/coaches e.g., reading, math, science, special education, enrichment, technology, art, music, physical education, etc.	1
Paraprofessionals under the supervision of a licensed professional supporting single, group, or classroom students.	0
Student support personnel e.g., guidance counselors, behavior interventionists, mental/physical health service providers, psychologists, family engagement liaisons, career/college attainment coaches, etc.	1

11. Average student-classroom teacher ratio, that is, the number of students in the school divided by the FTE of classroom teachers, e.g., 22:1 28:1
12. Show daily student attendance rates. Only high schools need to supply yearly graduation rates.

Required Information	2015-2016	2014-2015	2013-2014	2012-2013	2011-2012
Daily student attendance	98%	98%	98%	98%	98%
High school graduation rate	100%	100%	100%	100%	100%

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 2016.

Post-Secondary Status	
Graduating class size	162
Enrolled in a 4-year college or university	89%
Enrolled in a community college	10%
Enrolled in career/technical training program	0%
Found employment	0%
Joined the military or other public service	0%
Other	1%

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.

California Academy of Mathematics and Science, a comprehensive public four-year high school, seeks to increase the nation's pool of graduates in mathematics and science.

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

As a high-performing specialized math-science high school, the California Academy of Mathematics and Science (CAMS) has utilized a unique approach to selecting students. Unlike other specialized math-science schools in the country, which admit students from the top 2% to 5% in their classes, CAMS draws its students from a consortium of 11 school districts in the Los Angeles basin, targeting motivated students from the top third of their class, based on their STEM Academic Index. The STEM Academic Index is a formula modeled after one used by the California State University system, which identifies candidates with stronger mathematics achievement who are prepared for the school's rigorous math sequence. The school also accepts students from a variety of private and charter middle schools from within the consortium boundaries. Each year, teachers and students from CAMS make presentations at the feeder middle schools. The school also invites interested families and community members to a "Taste of CAMS" event in October to learn more about its full range of activities, and on two Saturdays in November, CAMS holds a tour and information sessions about the curriculum and application process and answers questions about admission. In the fall of their 8th grade year, interested students submit applications to attend CAMS. Once all applications are received, they are reviewed by the CAMS admissions committee, who selects 175 students each year for the incoming freshman class, usually accepting the top one to three candidates from each school. The recruitment and selection process results in student representation from all 84 public middle schools within its service area.

PART III – SUMMARY

The California Academy of Mathematics and Science (CAMS) was conceived in the late 1980s as a comprehensive public high school dedicated to increasing the number of young people who enter science, technology, engineering and mathematics (STEM)-related fields. CAMS, which opened in 1990, is a joint venture of the California State University Chancellor’s Office; California State University, Dominguez Hills (CSUDH), on whose campus it is located; the Long Beach Unified School District (LBUSD), which serves as fiscal agent and governing board; and a consortium of ten additional Los Angeles-area school districts. Two thirds of CAMS students are recruited from inner-city schools, and 60% meet the commonly accepted definition of at-risk students (single-parent home, low income, non-English speaking home, etc.). Over 45% speak a language other than or in addition to English at home, and 42% participate in the federal lunch program. Approximately 50% are the first in their families to go to college. This highly diverse student body reflects the demographics of the communities CAMS serves.

Discrepancies in the resources and academic rigor of the participating districts make for significant differences in the academic preparation of incoming students, which are addressed through tutoring, mentoring, advisement and special practice activities. In addition, the wide geographic area CAMS serves presents logistical challenges, which CAMS addresses through a late-start block schedule. School begins at 8:30 a.m. to accommodate students’ long commutes and allows flexibility for students to take additional electives.

On average, 90% of CAMS seniors go on to four-year colleges and universities and the balance attend community colleges. Principal among the factors contributing to CAMS’ success in preparing such a diverse student body for higher education is teamwork. Because the school is small, there are only five core teachers for each grade level, and all core teachers teach all the students at that grade level. The core teachers meet weekly in grade-level teams to coordinate curriculum and classroom activities and discuss students who may be having difficulties. This team structure creates a high degree of accountability for the students and helps them understand the connections between their studies in different subject areas. When students are having problems, the teacher teams alert administrators and the counselor so they can intervene to ensure that students do not slip through the cracks. The school-wide academic intervention protocol includes faculty mentorship and tutoring, as well as student and parent conferences and small group tutoring by college student aides.

CAMS likewise places an emphasis on teamwork among students. Each year, all students at each grade level are required to work in teams on interdisciplinary projects (IDPs) as a capstone experience, in which they solve a problem, create a product, colonize a planet, create a museum, etc., drawing on content from all five core areas. The IDPs encourage students’ creativity and mastery of STEM and non-STEM content areas, as well as give them valuable experience working with others. Well over 100 students each year also participate in the school’s extracurricular robotics teams.

Over the last six years, there has been an expansion of programs and new partnerships to increase students pursuits of our career pathways in engineering or biotechnology, thus benefiting from frequent engagement with industry professionals through guest lectures, speaker panels, and CSUDH campus lectures, as well as field trips to such sites as Chevron, SpaceX, Boeing, Raytheon, Northrop Grumman, Long Beach Public Health Department, Federal Reserve Bank, Salk Institute, Port of Long Beach and Long Beach City College nursing program. They regularly participate in summer internships and summer research opportunities, and their research and presentation skills, honed through their IDPs, robotics and other activities, make them highly sought after in the workplace.

With approximately 50% of CAMS students the first in their families to go on to college, the school seeks to foster their familiarity with the university environment. Juniors and seniors may enroll in CSUDH courses for university credit, and about 60% take advantage of this opportunity. Not only does this build their confidence in their ability to succeed in higher education, but on average CAMS seniors graduate with 22 units of college credit, which helps accelerate completion of their degrees after they matriculate. Because of these innovations, CAMS has been a leader in educational reform. In 2003, 2008 and 2013, it was named a

California Distinguished School, and in 2004 and 2011, it was named a National Blue Ribbon School. On the most current standards assessments, the Smarter Balanced Tests (SBAC), CAMS remains a statewide leader, ranking sixth in California out of more than 2,000 high schools. In recognition of its achievements, CAMS has been featured in numerous nationally televised reports on school reform, has been an Intel High Schools of Distinction finalist, and has consistently ranked in the top 100 high schools in the nation. In 2016, U.S. News & World Report ranked CAMS 100th in the nation and 10th in the state of California.

After being named a recipient of the National Blue Ribbon School award in 2011, staff were issued T-Shirts proclaiming CAMS a Blue Ribbon school. Shirts were worn with pride on field trips and at community events to advertise CAMS' recent success at earning this prestigious award. The striking circular logo has appeared on the home page of our school's website, serving as an enticement for potential students and their parents. The award is mentioned in writings and publications about CAMS, and is used as leverage in our grant writing campaigns.

PART IV – CURRICULUM AND INSTRUCTION

1. Core Curriculum:

CAMS’s curriculum is college-preparatory and incorporates a career/industry focus throughout, often through cross-disciplinary projects.

The English curriculum is based on the California standards and comprises two years of Accelerated English, one of Honors English and one of AP English Language. In all courses, instruction helps students develop and demonstrate comprehension, analysis and synthesis of literature and nonfiction, through oral and written responses. Students learn collaborative skills and effective modes of communication through group projects and peer evaluations. Essays are scored with common rubrics and are shared within the department to improve vertical articulation of writing instruction to prepare students for AP English and the SAT.

The CAMS mathematics curriculum begins with Geometry, Algebra II and Pre-calculus, and in the twelfth grade, all students are enrolled in AP Calculus AB, AP Calculus BC or AP Statistics. Students in Calculus BC are concurrently enrolled in calculus-based university physics at CSUDH. Although most CAMS students score well above grade level in math, struggling students are supported through such interventions as after-school tutoring and individualized Khan Academy practice lessons to address gaps in their learning. CAMS also subscribes to iXL, an online math practice program. In addition, all math teachers provide tutoring during conference periods, lunch and after school.

All students complete four years of science, including accelerated or AP biology, Physics or AP Physics and honors chemistry. Students also choose from such electives as anatomy and physiology and biotechnology. Students develop interactive problem-solving and communication skills, and real world issues are regularly tied into science concepts; students are also encouraged to pursue in-depth science projects and participate in the school-wide science fair. Teachers employ such teaching strategies as lectures, demonstrations, lab experiments, student research and interactive presentations, among others.

Social studies courses include Accelerated Modern World History, Big History, AP U.S. History and U.S. Government and Economics. Students also choose from such electives as AP Human Geography and AP Psychology. In all courses, students exercise higher-order thinking skills through discussions, debates, media analysis, research assignments (primary and secondary sources), and multiple assessment techniques. They are required to think critically, combine analytical skills and mastery of content, and apply their understanding/knowledge to real-life situations like mock elections, debate competitions, and serving as poll workers during elections.

In addition, CAMS requires career technical education courses in engineering and biotechnology as part of its core curriculum. See 2) Other Curriculum Areas below.

CAMS’s mission and vision is to prepare college- and career-ready students. Students take rigorous courses that meet California State University (CSU)/University of California (UC) “a-g” subject requirements, and 60% of juniors and seniors take CSUDH courses for college credit. Every student also pursues a career technical education pathway in engineering or biotechnology, and many take part in summer internships or research opportunities. In recent years, CAMS has expanded its Advanced Placement (AP) program, increasing course offerings from six in 2015-16, to 12 in 2016-17. This year 853 AP exams will be administered at CAMS.

2. Other Curriculum Areas:

UC and CSU admissions requirements include at least one course in visual and performing arts, which all CAMS students fulfill, gaining presentation skills and the confidence to speak and perform before an audience. Courses include Introduction to Theatre, Chorus, Orchestra, and Drawing and Painting, and Dance. Students apply learning in a variety of ways, including participation in interdisciplinary projects;

schoolwide programs; and extracurricular endeavors such as plays, performances and competitions. The 48-voice chorus and 48-member orchestra perform regularly at school functions; over the past 20 years, the chorus has also participated in numerous performances off campus, including Carnegie Hall appearances in 2005, 2007, 2010 and 2015.

The state requires students to take two years of physical education, and CAMS's PE program provides students with instruction in a variety of sports and athletic activities, including badminton, basketball, swimming, soccer, dance, aerobics and volleyball. The program is taught on a structured basis, offering introductory activities, fitness, lesson focus and game/closing activity. Teachers use task sheets, reciprocal task sheets, guided discovery, problem solving, direct instruction and small group activities to meet varied student needs. They also use written assignments and video presentations to offer variety and encourage higher-level thinking.

To prepare students to excel in a global economy, CAMS offers two world languages: Japanese and Spanish, including AP Spanish. All students are required to take at least two years of a world language, but are encouraged to take up to four years. Besides practice in areas that lead to mastery of grammar and acquisition of vocabulary, students create journals, portfolios, essays and a wide variety of projects. Juniors and seniors may also enroll in French at CSUDH. The UC requires at least two years of world language, with three years recommended. About half of CAMS students take three years, and 15% four years.

Career Technical Education (CTE)

In fall 2001, concerned about the comparatively low number of graduates declaring majors in engineering, CAMS implemented an introductory engineering course as part of the ninth-grade core curriculum. Today, as a part of their overall academic core, all ninth- and tenth-grade students are required to complete two engineering foundation courses, Introduction to Engineering Design and Principles of Engineering, which are part of the nationally recognized Project Lead the Way curriculum. Eleventh and twelfth graders are encouraged to enroll in specialized and capstone courses as electives. In addition to the two required engineering courses that all freshmen and sophomores take, approximately 30 to 35 take Digital Electronics, AP Computer Science or Computer-Integrated Manufacturing, and about 80 seniors--nearly half the class--take the capstone course, Engineering Design and Development. Students receive dual credit for all PLTW courses, which are approved for high school credit as well as college credit from El Camino College through an articulation agreement.

The engineering curriculum incorporates the principles, theories, and recurring themes important for understanding engineering technology. Engineering teachers help students understand the "why" that supports what they are learning. Lessons include the use of the design process to analyze and solve problems; consideration of ethical, environmental, social and economic impact; critical thinking; engineering standards; technical documentation; and understanding contemporary issues to determine solutions to complex problems. Students also learn how to document their work and communicate solutions to peers and the professional community. The performance objectives are aligned with the national and state standards for technology, science, mathematics and English. Because of the engineering curriculum, CAMS students participate in many extracurricular engineering-related activities. and have won impressive awards.

In 2011, CAMS added a CTE pathway in biotechnology, and currently all juniors take the first course in the sequence, Biotechnology 1-2, with about 35 enrolled in the advanced course, Biotechnology 3-4. The curriculum fulfills the UC a-g requirements and essentially has students running their own mini microbiology lab. Emphasizing biochemistry, molecular biology, and microbiology, it teaches hands-on lab skills. Just as the engineering core courses give students a taste of hands-on engineering, so the biotech courses provide real-world experiences in biotechnology and introduce students to knowledge and skills that will be critical to their scientific literacy and their ability to select and pursue careers in the field.

3. Instructional Methods, Interventions, and Assessments:

All instruction at CAMS is standards-aligned, and teachers utilize LBUSD course outlines and pacing guides to support their curriculum. As the CAMS AP program has expanded, AP teachers have been trained and supported using College Board methodology and resources to develop courses to foster student content

mastery.

Assessment drives school improvement, and at CAMS authentic assessment is a primary tool to inform student mastery, specifically in project-based learning tasks and interdisciplinary projects. Teachers use formative and summative assessments throughout their units of instruction to inform student learning. District benchmark and end-of-course exams are used to measure progress throughout the year. In addition, students take criterion-referenced tests at different grade levels including; PSAT/SAT exams (grades 9-12), math and English SBAC exams (grade 11), and AP exams at all grade levels, based on student registration.

This assessment data is also used to drive instructional practice and intervention at the school. The CAMS administration and Instructional Leadership Team (ILT), composed of administration, all the content department chairs and grade-level lead teachers, review assessment data at the beginning of the academic year, and based on the information, develop action plans to address areas of improvement. These action plans are shared with the departments, grade-level teacher teams, faculty, and other stakeholder groups such as the School Site council. The teams then monitor and review the action plans on a quarterly basis, using assessment data collected throughout the year to inform next steps. An example of this process is the 2015-16 SBAC math data, which showed that while 97% of students scored in the “met and exceeded” range, one subgroup performed 7% lower than the other subgroups. A math action plan was developed by the ILT and math department to support this subgroup, including funding for tutoring, use of Khan Academy practice lessons, and implementation of a math placement test to support the subgroup. The action plan has been implemented and monitored over 2016-17, and the students are responding to the additional support in math curriculum.

Although CAMS subgroups do not have gaps exceeding 10%, the focus and mantra is that all students can be at the top, and CAMS sets goals to close the achievement gaps by 50%; this year the goal was 3% in both English/Language Arts and Mathematics to close the gap between the highest- and lowest-performing subgroups, thus ensuring that all students continue to move forward.

CAMS also draws on its culture of collaboration and teamwork to guide instruction. Interdisciplinary grade-level teacher teams share responsibility for the academic progress of all students at their grade level, and the CAMS schedule provides every grade-level team with 200 minutes of common planning time each week. Teachers use this time to plan interdisciplinary projects, develop curriculum, share best practices, schedule activities, and monitor and support individual student progress. Departments are also provided time on a monthly basis to plan vertical alignment, common assessments, create rubrics, and interventions specific to their content.

Creating a college- and career-ready culture is also fostered by the intentional planning and focus of the grade-level teacher teams. This includes incorporating work-based learning experiences into curriculum at all grades levels, such as Career Day and mock interviews, integrating college tours for juniors throughout the academic year, and encouraging student internship opportunities in grades 11 and 12. With CAMS’ students coming from such diverse backgrounds, there are varying degrees of college and career readiness, and work-based learning activities give students from disadvantaged backgrounds the opportunity to be exposed to industry professionals and STEM careers that they otherwise would not have access to.

This year the school increased the technology on campus, purchasing class sets of Chromebooks for each English classroom as well as for AP research. All students have been issued Google student accounts through LBUUSD. This level of technology integration is creating more opportunities for students to collaborate on assignments both in and out of the classroom. Students are also able to transfer knowledge and skills they gain in core courses and apply these skills to extracurricular activities such as Multicultural Fair, History Day, HOSA, science fair, and other opportunities. Because of this increase in technology availability and integration at the school site, various teachers are utilizing Google Classroom as a platform for collaboration.

PART V – SCHOOL SUPPORTS

1. School Climate/Culture:

Although CAMS students come from diverse economic, social, ethnic, and geographic backgrounds, they share many attributes. All are college-bound, and about half are the first in their families to attend college. For many students, English is not their first language. Since CAMS is a high school of choice, students share the values of learning and earning an education. The synergy that exists among the faculty and students results from individual student motivation, combined with the power of student-faculty collegiality and the need to trust and accept others from diverse backgrounds.

Academics center on daily group and interactive work in the classroom, which requires students to develop interpersonal skills based on understanding and respect for others. Each grade-level teacher team assigns a year-end Interdisciplinary Project (IDP) as a culminating/capstone grade-level activity, encompassing academic knowledge as well as skills needed for the 21st-century work environment.

CAMS offers a full spectrum of support for students. The Student Support Personnel Team (SSPT), which consists of one full-time counselor, a part-time district school psychologist, a full-time assistant principal, and a full-time principal, offers personal and at-risk counseling, individual academic planning, and extensive assistance in college selection and the application and financial planning process.

Teachers are an integral part of many key decision-making processes at the school and drive such programs as teacher professional development and the academic intervention protocol. Teachers identify students most in need of academic intervention early in the school year and implement the appropriate intervention, such as additional math support courses, lunchtime tutoring programs, and monitored tutoring sessions. Once on the intervention list, the student is tracked throughout the year to examine the effectiveness of the program. When teachers feel they need additional input about a student situation, they first turn to their grade-level colleagues and, if necessary, reach out to the SSPT for assistance.

As a school, teachers feel valued and supported through expressions of gratitude and recognition for their successes. Each staff meeting opens with announcements to congratulate and recognize success stories from staff members. Faculty regularly thank each other and wish each other well as they embark on field trips and competitions that support student learning and achievement. Students express gratitude to their teachers and school staff by verbally thanking them and gifting them with heart felt notes and cards and other tokens of appreciation. Our school's parent organization generously hosts a monthly staff breakfast and an annual appreciation luncheon.

Activities such as robotics, MESA, and science team competitions, along with spirit rallies, dance shows, musicals, talent shows, proms, sports team competitions and student-faculty basketball games, promote school spirit and offer opportunities for students and teachers to interact in non-academic settings. CAMS students can choose from more than 40 clubs on campus, and over 75% participate in some extracurricular activity.

Collectively, these factors reflect the strong culture of collaboration at CAMS and create a warm, supportive environment for students, faculty and staff, contributing to the school's success.

2. Engaging Families and Community:

Parent and family involvement has long been integral to CAMS' success, starting with the CAMS PTSO (Parent Teacher Student Organization), which was founded shortly after the school opened. It is made up of parents, teachers and students who work together to enrich and improve the educational environment and experiences at the school, and 100% of dues and funds raised are used for CAMS PTSO programs.

Each year, the PTSO helps CAMS by contributing funds to a variety of programs and activities--for example, classes and programs, clubs, robotics and computer science summer camps, sports teams,

freshman orientation, teacher and staff appreciation events, supplies and equipment and field trips. In recent years, parental involvement has increased through a series of campus events such as Mock Interview Night and Career Day, where parents with connections to STEM-related industries offer information and mentorship to students interested in STEM careers. CAMS also hosts a parent forum and workshops on topics such as college admissions and financial aid, technology training, the Advanced Placement program, course selection and registration, internships and work-based learning opportunities, so parents can better help their child navigate high school and college and career readiness. The principal also hosts quarterly “Coffee with the Principal” open forums to meet with family members. Parents are partners in the school’s interventions protocol and are invited to grade-level team meetings to create a plan of action to support their student in the areas of concern.

CAMS has had a strong relationship with its community partners since its inception. Businesses have hosted field trips and provided financial support, guest speakers, student internships and mentors, particularly to the robotics teams. Professionals from Northrop-Grumman and Boeing provide feedback on Engineering Design and Development (EDD) student presentations and help grade the projects. Business representatives also serve on the CAMS Business Advisory Board, along with CSUDH faculty. CAMS students are closely involved in community outreach efforts. The robotics teams work with students at area middle schools, mentoring their robotics teams. Similarly, students in the EDD class conduct workshops and presentations about STEM fields to elementary schools.

The relationship with CSUDH is reciprocal. CAMS juniors and seniors take university courses for credit, while student teachers from CSUDH’s credentialing program come to CAMS for classroom observation and sometimes student-teach at the school. El Camino College, a nearby community college, provides college credit for CAMS students in the PLTW classes.

3. Professional Development:

Professional development at CAMS is data-driven, ensuring that it will have a positive impact on teacher and administrator practice and, ultimately, student success.

Each August, CAMS administrators attend LBUSD professional development workshops, where they identify the greatest needs at the school based on data that includes AP pass rates, the D/F list and scores on standardized tests from the previous year. From those data, they choose a focus area from several options provided by the district and establish goals for the coming year. The data guide what resources will be allocated for professional development, and the district provides the initial training on research based practices in the targeted areas.

In the past, for example, the Common Core State Standards were the focus, and LBUSD provided professional development for all teachers around the fundamental shifts in pedagogy and successful implementation of the standards. Department chairs also attend monthly district trainings.

For the past year, the professional development focus at CAMS has been on lesson design. Following a district training by Fisher and Frey, CAMS administrators took the information back to the school, where the Instructional Leadership Team, made up of the school administrators, department chairs and grade-level team leaders, determined how best to implement it. Modalities have included teacher training by school administrators and by individual teachers for the rest of the staff, and release days to air videos showing exemplary practice. These are then followed by walkthroughs, where small groups of teachers from a department will visit classrooms to assess whether their peers are successfully implementing the practices. During these walkthroughs, the teachers collect data on the extent to which the practices were in place, using a scoring guide, and the data is distributed school-wide to foster discussion in the various teacher groups about the impact of the professional development on curriculum and student learning. The walkthroughs are not evaluative in nature and focus solely on data gathering for future planning of professional development.

At an individual level, CAMS gives teachers the opportunity to attend conferences in their discipline. On a more informal basis, faculty share a wide variety of professional strategies during the weekly grade-level

team meetings, monthly staff meetings and departmental meetings. The counseling staff has attended district trainings and state and national conferences, including the University of California Counselors Conference, the National Association of Association of College Admission Counseling Conference and the California Student Aid Commission Counselor Conference.

4. School Leadership:

The CAMS leadership philosophy reflects the shared belief that all students can be successful and productive citizens in a diverse and competitive world. As the product of a collaboration, CAMS has sought the input of diverse constituents from its inception, and this ethos is reflected in all aspects of the school.

The CAMS leadership team is made up of a principal, assistant principal, counselor, AP coordinator, and teacher leaders, including department chairs, pathway lead teacher and grade-level leads. This team meets on a monthly basis to discuss instructional needs and student support, monitor school-wide goals and make recommendations for funding.

This same approach has been utilized with other stakeholder groups, where leadership is shared among multiple constituents. The School Site Council, made up of elected members including the principal, teacher representatives, classified staff, students and parents, serves as a data-monitoring team utilizing shared decision making to meet the needs of all stakeholders. The council meets monthly to discuss school action plans, analyze data, make recommendations for funding based on findings and ensure that CAMS is working on closing the achievement gap with data-driven decisions and that there is alignment between the data and identified needs and the allocation of resources.

The schoolwide intervention protocol was developed by the school administration and grade-level lead teachers. Using a tiered approach, the team developed a systematic tool for intervention that supports all students, while also targeting the students in most need of academic or socio-emotional support. This protocol includes mentorship and tutoring, as well as academic interventions such as student and parent conferences. This approach to student support, building a team and working collaboratively to develop a solution represents the leadership approach at CAMS.

These examples illustrate how collaboration is fostered by the site administration and supported by the principal to benefit students. Ultimately the principal is responsible for all aspects of the school's operation, including implementing district and state policies, managing the budget and expenditures, initiating contracts, interfacing and collaborating with CSUDH, monitoring the admissions process, cultivating communication with the 11 school districts making up the CAMS consortium, evaluating teachers and staff, managing grants and proposals, representing the school to external audiences, cultivating relationships with legislative and peer institutions, managing the facilities and overseeing periodic accreditation reviews.

Part VI – STRATEGIES FOR ACADEMIC SUCCESS

While many different factors have contributed to CAMS' success, the common thread among them is collaboration, which is embedded in the school's DNA.

At its most basic level, the collaboration between the CSU Chancellor's Office, CSUDH, the Long Beach Unified School District, ten additional Los Angeles-area school districts and industry partners that produced CAMS has made for a stable institution that offers students, teachers and administrators unprecedented educational and professional opportunities. But that culture of collaboration has percolated down to every level of the school, structuring it as a collaborative enterprise and informing how it functions on a daily basis to promote student success.

At the policy level, the School Site Council, a collaboration encompassing the principal, teacher representatives, classified staff, students and parents, utilizes shared decision making to address the needs of all stakeholders by making data-driven recommendations for the allocation of resources. Administrators also collaborate with teachers in the Instructional Leadership team, reviewing assessment data together to develop action plans to address areas of improvement.

Teachers collaborate with one another through the grade-level teacher teams, which meet weekly to coordinate core curriculum and classroom activities and plan capstone interdisciplinary projects. This collaboration helps students understand the connections between their studies in different subject areas. The teams also discuss students who may be having personal or academic problems, and as necessary, alert administrators and the counselor so they can intervene to ensure that students do not slip through the cracks. This, too, is collaboration, and it creates a high degree of accountability for the students.

Collaboration is a key part of the student experience as well, most notably in the capstone interdisciplinary projects (IDPs). Working in teams, they develop their projects and make group presentations, giving them valuable experience working with others. Other, smaller team projects are also a regular part of the classroom curriculum, so that by the time they graduate, CAMS students are savvy about group efforts and how to make them successful.

The culture of collaboration also extends to CAMS' community partners: CSUDH, which enables CAMS students to take university courses and which sends its secondary teaching credential students to observe CAMS classrooms; El Camino College, which grants college credit for PLTW classes; and industry partners, who advise about curriculum, provide mentors and internships, host field trips, serve on the CAMS Business Advisory Board, and provide financial support.

Without collaboration, CAMS would be a very different school, and its students and stakeholders would be poorer for it.