Manhattanville in West Harlem Implementation Plan Report October 14, 2022 Submission

Declaration Reference and Key Data

Obligation Section Number: 5.07(c)(ix)
Obligation Title: Availability of Faculty

Obligation Page Number: 54

Obligation Trigger: When Upper Level Students Matriculate
Obligation Start Date: Beginning of 2012-2013 Academic Year

Obligation End Date: End of 2036-2037 Academic Year (25 Years from Commencement)

Obligation Status: In Compliance

Obligation: Innovation/Changed Conditions

In accordance with the Declaration of Covenants and Restrictions Section 5.08, Obligation 5.07 (c)(ix) is modified to clarify the obligation. In general, the scope of services to be provided has not been changed. Additionally, the obligation in Section 5.07(c)(viii) New Public Middle and High School for Math, Science and Engineering that focuses on curriculum support from Columbia Faculty has been moved to this obligation for clarity of faculty engagement. Empire State Development and Columbia University agreed to this modification on November 28, 2018.

Modified Language:

Availability of Faculty. Columbia shall provide curriculum support to the faculty of Columbia Secondary School created in accordance with Section 5.07(c)(viii) to ensure the highest level of education in math, science and engineering, and continuing for a 25 year period from May 20, 2009. This portion of the commitment will end in 2034.

Commencing with the academic year in which the School matriculates upper level students eligible for competing in regional and national math, science and engineering competitions, CU shall endeavor in good faith to make its faculty from existing campuses available to upper level students from the School interested in competing in regional and national math, science and engineering competitions. As the Project Site is developed, CU shall endeavor in good faith to make its faculty from the Project Site available to upper level students at the School interested in competing in regional and national math, science and engineering competitions. Columbia shall provide curriculum support to the faculty of the new school to ensure the highest level of education in math, science and engineering, and continuing for a 25 year period from commencement.

Evidence of Compliance

1. Annual report

Columbia University's Implementation Plan and all supporting documentation are made available on the Columbia Neighbors Webpage at https://neighbors.columbia.edu/content/community-commitments.

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EOC Checklist for Obligation 5.07(c)(ix):
Please check to verify EOC items submitted for review.
1. Annual report
Monitor's Notes / Comments:
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Status: Please check to indicate the status of Obligation 5.07(c)(ix):
☐ In Compliance
☐ In Progress
☐ Not In Compliance
☐ Not Triggered

COLUMBIA SECONDARY SCHOOL

for Math, Science, & Engineering

425 West 123rd Street, New York, NY 10027

A Public School, Community, and University Partnership



Challenging Academics – A Passion for Reason and Knowledge – Strength in Diversity

Memorandum

To:

Provost

From:

Lenice Nelson, Principal Columbia Secondary School Staff and Student Interactions

Updated: September 30, 2022

Columbia Secondary School for Math, Science, and Engineering (CSS-MSE) opened in 2007 and has been providing the community with an excellent public secondary school (grades 6–12) option for over a decade. Based on feedback about the school's needs and priorities from my staff and our leadership team, the University has continuously supported CSS-MSE and its students through access to the expertise of Columbia's faculty and to campus facilities.

This report describes the projects and programs through which CSS-MSE accessed Columbia's faculty and campus resources from September 1, 2021 through August 31, 2022. As is noted in the report, most are ongoing. While Columbia's obligations under the *Availability of Faculty* and *Availability of Facilities* sections of the Declaration began in 2012, CSS-MSE's interactions with Columbia's faculty began as early as 2007.

In addition to the other projects and programs noted in this report, CSS-MSE upper-level students access Columbia University's libraries, computing facilities, and other academic support facilities and services while taking courses at the University. This program, administered by Columbia's School of Professional Studies and described in more detail in this report, benefits our students and staff by exposing them to high-quality research databases and computing facilities on Columbia's Morningside campus. CSS-MSE students who are enrolled in classes at Columbia have the support and guidance of their instructors and classmates and have demonstrated the maturity and responsibility needed to successfully navigate a university campus.

In addition to the campus experience and access enjoyed by students who are taking courses, these and other students also visit the campus under the supervision of CSS-MSE teachers in collaboration with Columbia's administrative staff and academic faculty for a variety of other projects and programs, as also described herein.

University faculty, instructor, or staff member:

School, department, or unit:

CSS-MSE students or staff member:

Project/purpose:

Fu Foundation School of Engineering and Applied Science (SEAS)

Engineering the Next Generation (ENG): Rising high school seniors match with engineering labs and research mentors, and supervised by faculty members. Program components include research, mentoring, college preparation, presentation skills, as well as academic and professional workshops. Students are challenged with high-level academic expectations of both the researchers and undergraduate mentors. As a result, this year the selection was highly competitive with 80 completed applications. Participants must be at least 16 years of age in order to participate and are granted a stipend for their time in the program. In addition, CU partnered with New York City's Department of Youth and Community Develop (DYCD) to utilize the Summer Youth Employment Program (SYEP) so that eligible students could receive a greater stipend than in previous years.

Outreach to students:

Identification of potential participants and outreach to students is conducted by CSS-MSE faculty and administration. Columbia Engineering Outreach Programs team also holds info sessions at CSS-MSE.

Process by which students access benefit:

CSS-MSE faculty members facilitate students' participation in the program as part of the ongoing collaboration with

CU faculty. Students submit applications individually.

Time period:

Ongoing

University faculty, instructor, or staff member:

School, department, or unit:

CSS-MSE students or staff member:

Project/purpose:

Fu Foundation School of Engineering and Applied Science (SEAS)

; 1 student

Outreach to students:

Process by which students access benefit:

Time period:

The AI for All summer program is a three-week summer intensive that provides students with exposure to the field of Artificial Intelligence.

Identification of potential participants and outreach to students is conducted by CSS-MSE faculty and administration.

CSS-MSE faculty members facilitate students' participation in the program as part of the ongoing collaboration with CU

Summer 2022

University faculty, instructor, or staff member:

School, department, or unit:

CSS-MSE students or staff member:

Project/purpose:

Vagelos College of Physicians & Surgeons Office of Diversity & Multicultural Affairs

; 8 rising Juniors and rising Seniors

S-PREP is a free high school and college preparatory program for 7th - 12th grade students, who are interested in a career in medicine or related STEM professions. The long-range objective is to increase the number of historically underrepresented and economically disadvantaged students prepared to enter college, and improve their participation rate in healthcare and STEM.

Outreach to students:

Process by which students access benefit:

Summer 2022 Time period:

Identification of potential participants and outreach to students is conducted by CSS-MSE faculty and administration.

Columbia Engineering Outreach Programs team also holds info sessions at CSS-MSE.

CSS-MSE faculty members facilitate students' participation in the program as part of the ongoing collaboration with CU

faculty. Students submit applications individually.

University faculty, instructor, or staff member:

School, department, or unit:

Institutes: Zuckerman Institute

Centers: Columbia University Irving Medical Center, Columbia MR Research Center

Departments: Biochemistry and Molecular Biophysics, Biomedical Engineering, Psychiatry, Psychology, Neuroscience,

Systems Biology

CSS-MSE students or staff member:

4 CSSMSE students in grades 10 through 12

Project/purpose:

CSS-MSE worked with Columbia's Zuckerman Institute to include CSS-MSE students in BRAINYAC (Brain Research Internships in New York at Columbia). BRAINYAC is a program for students with an interest in biomedical - specifically neuroscience - research. The program runs from January - August of each year. Students learn basic neuroscience concepts and laboratory skills which prepare them for a seven-week mentored science research experience in Columbia University research laboratories. Students receive a stipend for their participation and produce a poster that they present to scientists and family members at the end of the summer. The 2021-2022 program was hybrid due to the COVID-19 pandemic, with the first 3 sessions (January -March) being virtual, and the remainder of the program (March-August) being held in person.

Outreach to students: Identification of potential participants and outreach to students is conducted by BRAINYAC program staff in

collaboration with CSS-MSE faculty and administration.

Process by which students access benefit: CSS-MSE faculty members facilitate students' participation in the program as part of the ongoing collaboration with CU

faculty. BRAINYAC program staff facilitate an information session for interested CSS-MSE students to learn more about

the program and its application process.

Time period: Ongoing

University faculty, instructor, or staff member:

School, department, or unit:

CSS-MSE students or staff member:

Project/purpose:

Outreach to students:

Process by which students access benefit:

Time period:

Associate Director of Admissions

Undergraduate Admissions and Financial Aid

CU Office of Admissions designates guest speakers to address CSS-MSE families during Family College Night. Virtual sessions for CSS-MSE families and students were held in the fall for seniors and in the spring for juniors.

Students are invited to attend the meeting with their families by CSS-MSE staff via email, class announcements and

letters home.

Students attend scheduled college-oriented events

Fall 2021 and Spring 2022

University faculty, instructor, or staff member:

School, department, or unit:

CSS-MSE students or staff member:

Project/purpose:

Office of the Provost

Continue supporting existing admissions structures for CSS-MSE students to enroll in the University's School of Professional Studies (SPS) through meetings and calls with SPS and CSS-MSE staff as needed. Continue providing outreach and introductions to University departments and promoting CSS-MSE throughout the University.

Outreach to students:

Process by which students access benefit:

Time period:

Varies by project Varies by project

Ongoing

University faculty, instructor, or staff member:

School, department, or unit:

CSS-MSE students or staff member:

Project/purpose:

Outreach to students:

School of Professional Studies

Facilitating registration of CSS-MSE students in Columbia classes, including outreach to University faculty and staff, refining a system to vet courses to ensure that they are suitable for CSS-MSE students, creating and delivering

orientations regarding CSS-MSE student registration and access to CU resources.

CSS-MSE administration and faculty identify students prepared for college-level coursework and independence and select student participants through a rigorous application and review process. CSS students also submit a CU Pre-College application to ensure completeness and accurate and timely account setup. CSS-MSE administration and faculty work

with students to chose classes that are of interest and support their learning.

Process by which students access benefit:

CSS-MSE administration and SPS staff finalize list of students each term. Students apply individually through the SPS application portal and their applications are reviewed for eligibility by SPS Admissions. After their accounts are set up in the SPS system, students who are participating for the term receive instructions from CSS-MSE administrators about how to enroll. An in-person orientation is conducted for participating CSS-MSE students by SPS staff, including familiarizing them with the Morningside campus, getting their CUIDs, and visiting the Columbia Bookstore to get their books (which have been set aside for CSS-MSE students based on their courses). Once enrolled and oriented, CSS-MSE students begin attending their classes alongside, and indistinguishable from, other students in the class. CSS-MSE Administration oversee students' success and offer mentoring and tutoring opportunities when available to support students in their CU coursework. Students who take classes for credit are able to request a CU transcript following completion of their senior year, which can be submitted to colleges.

Time period: Ongoing

University faculty, instructor, or staff member:

School, department, or unit:

CSS-MSE students or staff member:

Project/purpose:

Campus Services, Columbia University Bookstore, School of Professional Studies

All CSS-MSE students who are enrolled in CU courses through SPS;

The Columbia University Bookstore, in conjunction with School of Professional Studies, has developed a streamlined process to facilitate CSS-MSE's acquisition of textbooks for the CU courses for which they are registered. This partnership was developed specifically for CSS-MSE students and is evaluated and improved each semester to ensure students have easy access to appropriate course materials.

Outreach to students:

CSS-MSE administration and faculty identify students prepared for college-level coursework and independence and work with them to chose classes that are of interest and support their learning.

Process by which students access benefit:

Once CSS-MSE students are enrolled in their chosen courses for the term, a list of their names and courses is sent by CSS-MSE administration to the Columbia Bookstore. The Bookstore sets aside all materials needed for the courses (except in the infrequent instance of something not being available there), and at the time of their orientation, CSS-MSE students visit the Bookstore, where they are shown the window at which they receive their books and told what to do in the case of a change in course or the need to pick up additional course materials. The Bookstore donates materials annually up to an amount that covers almost the entire cost of the students' books; the small remainder of expenses is covered by the school. Students do not incur any expenses from the Bookstore for required course books. Students return all hardcover and nonconsumable books after the completion of their CU semester.

Time period:

Ongoing

University faculty, instructor, or staff member:

School, department, or unit:

CSS-MSE students or staff member:

Project/purpose:

History Department, Department of East Asian Languages and Cultures, Libraries Administration

Faculty and graduate students in CU's History Department are engaged in a program with CSS-MSE's History faculty to support and improve the focus on research and writing in CSS-MSE's history curriculum and prepare students for college level work. This past academic year, the program included the following elements: pairing graduate students with CSSMSE history teachers to assist 7th, 9th and 10th grade students and history teachers to support essay writing and to help develop research and research papers. The groups coordinated two library visits, one to Butler Library and the other to a local NYPL branch library, to discuss use of primary source materials.

Outreach to students:

Process by which students access benefit:

The project was a mandatory component of 7th, 9th, and 10th grade coursework.

CSS-MSE faculty members facilitated students' participation as part of the ongoing collaboration with CU faculty. Collaboration between CU and CSS-MSE faculty has facilitated enhancements to to the CSS-MSE curriculum, affecting

all students.

Time period:

Ongoing

University faculty, instructor, or staff member:

School, department, or unit:

CSS-MSE students or staff member:

Project/purpose:

SEAS

Approximately 20 students in grades 9-12;

FIRST Robotics: Throughout the year, CSS-MSE students prepare for and participate in the FIRST Robotics Competition, an annual national robotics competition for students in grades 9-12. The team meets on campus multiple times a week, working closely with peer team members, undergraduate mentors, and staff from the Mechanical Engineering Department, CSS-MSE students build and program robots and compete at the local and regional level. SEAS Outreach Programs hosts the FIRST competition kickoff event not only for CSS-MSE but also including other local teams each January. 2021 marked the 21st anniversary of the FIRST Robotics team at Columbia and there were several events to acknowledge and celebrate the occasion. 25 students from CSS participated in 2022 and 6 students from Columbia Engineering served as mentors.

Outreach to students:

Process by which students access benefit:

Identification of potential participants and outreach to students is conducted by CSS-MSE faculty and administration. CSS-MSE faculty members facilitate students' participation in the program as part of the ongoing collaboration with CU

faculty.

Time period: Ongoing

University faculty, instructor, or staff member:

School, department, or unit:

Various

CSS-MSE students or staff member:

Various

Available to CSS-MSE classroom teachers and certain full-time CSS-MSE employees

Project/purpose:

Taking graduate courses in specific specializations through CSS-MSE/CU tuition scholarship program to further

pedagogical work at CSS-MSE

Outreach to students: Process by which students access benefit: n/a n/a

Ongoing

Time period:

University faculty, instructor, or staff member:

Lamont-Doherty Earth Observatory

Project/purpose:

CSS-MSE students or staff member:

School, department, or unit:

Outreach to students:

CSS-MSE science faculty participated in Day on the Hudson professional development workshop.

n/a

Process by which students access benefit:	While students do not directly participate, the professional development opportunity has resulted in enhancements to the
	CSS-MSE curriculum, affecting all students.
Time period:	September 2021

Time period:	September 2021
University faculty, instructor, or staff member:	
School, department, or unit:	Chemistry, Classics; Computer Science; Division of Special Programs; Earth & Environmental Engineering; East Asian Languages and Culture; French; History; Linguistics; Mathematics; Philosophy; Physics; Slavic Languages and Literature; Sociology; Spanish and Portuguese; Statistics
CSS-MSE students or staff member:	20 CSS-MSE students;
Project/purpose:	In the fall 2021 term, 20 CSS-MSE students took courses for college credit at Columbia University, including 12 CSS-MSE students who were newly enrolled at Columbia. Students enroll through the School of Professional Studies and are provided with a student orientation and access to discounted textbooks at the Columbia University bookstore. Students have full access to Columbia instructors, including use of office hours if needed. Courses this semester included A Better Planet by Design; Language, Brain and Mind; Calculus I and Calculus III; Elementary French I and Intermediate French I; Philosophy and Feminism; Introduction to Statistics.
Outreach to students:	CSS-MSE administration and faculty identify students prepared for college-level coursework and independence and work with them to chose classes that are of interest and support their learning. The program is well established at CSS-MSE and discussions about preparedness are a standard part of all CSS-MSE students' experiences.
Process by which students access benefit:	CSS-MSE administration and SPS staff finalize list of students each term, and after their accounts are set up in the SPS system, students who are participating for the term receive instructions from CSS-MSE administrators about how to enroll. An in-person orientation is conducted for participating CSS-MSE students by SPS staff, including familiarizing them with the Morningside campus, getting their CUIDs, and visiting the Columbia Bookstore to get their books (which have been set aside for CSS-MSE students based on their courses). Once enrolled and oriented, CSS-MSE students begin attending their classes alongside, and indistinguishable from, other students in the class.

	attending their classes alongside, and indistinguishable from, other students in the class.
Time period:	Fall 2021
-	
University faculty, instructor, or staff member:	
School, department, or unit: CSS-MSE students or staff member:	Astronomy; Biological Sciences; Computer Science; Contemporary Civilization; Division of Special Programs; 34 CSS-MSE students
Project/purpose:	In the spring and summer 2022 terms, 34 CSS-MSE students took courses for college credit at Columbia university, including 18 CSS-MSE students who were newly enrolled at Columbia. Students enroll through the School of Professional Studies and are provided with a student orientation and access to discounted textbooks at the Columbia University bookstore. Students have full access to Columbia instructors, including use of office hours if needed. Courses these semesters included Coding in Java; Data structures in Java; Fundamentals of Neuroscience; Neuroscience and the Law; Physics for poets; The Science of Psychology.
Outreach to students:	CSS-MSE administration and faculty identify students prepared for college-level coursework and independence and work with them to chose classes that are of interest and support their learning. The program is well established at CSS-MSE and discussions about preparedness are a standard part of all CSS-MSE students' experience.
Process by which students access benefit:	CSS-MSE administration and SPS staff finalize list of students each term, and after their accounts are set up in the SPS system, students who are participating for the term receive instructions from CSS-MSE administrators about how to enroll. An in-person orientation is conducted for participating CSS-MSE students by SPS staff, including familiarizing them with the Morningside campus, getting their CUIDs, and visiting the Columbia Bookstore to get their books (which have been set aside for CSS-MSE students based on their courses). Once enrolled and oriented, CSS-MSE students begin attending their classes alongside, and indistinguishable from, other students in the class.
Time period:	Spring and Summer 2022 terms

University faculty, instructor, or staff member:	
School, department, or unit:	School of Professional Studies
CSS-MSE students or staff member: Project/purpose:	; 26 CSSMSE students in 8th and 9th grades Through SPS's Pre-College Immersion Program, CSSMSE students take Columbia non-credit courses and participate in extracurricular and co-curricular activities, including college preparedness programming, community outreach and awareness activities, and special lectures. At a course's conclusion, participants receive a Certification of Participation and an evaluation letter from the instructor.
Outreach to students: Process by which students access benefit:	Identification of potential participants and outreach to students is conducted by CSS-MSE faculty and administration. CSS-MSE faculty members facilitate students' participation in the program as part of the ongoing collaboration with CU faculty.
Time period:	Ongoing
University faculty, instructor, or staff member:	Director of Educational Technology at Tutoring and Learning Center
School, department, or unit: CSS-MSE students or staff member: Project/purpose:	Tutoring and Learning Center of the Institute for Social and Economic Research and Policy 20-30 9th and 10th grade students Through the Tutoring and Learning Center, Columbia and Barnard students offer online math tutoring to individual students and small groups. Sessions can include leadership activities, skill-building workshops, games, mentoring, and homework help.
Outreach to students:	Identification of potential participants and outreach to students is conducted by CSS-MSE faculty and administration.
Process by which students access benefit:	CSS-MSE faculty members facilitate students' participation in the program as part of the ongoing collaboration with CU faculty.
Time period:	Ongoing
University faculty, instructor, or staff member: School, department, or unit: CSS-MSE students or staff member: Project/purpose: Outreach to students: Process by which students access benefit:	School of Professional Studies 26 CSSMSE students Online writing workshop offered in three 3-week modules over a total of nine weeks, taught by specialist in undergraduate writing Students enrolled in Pre-College Immersion (see above) are eligible to participate. Students enrolled in Pre-College Immersion (see above) are eligible to participate.
Time period:	Fall 2021
University faculty, instructor, or staff member: School, department, or unit: CSS-MSE students or staff member: Project/purpose:	Department of History 30 12th grade students; Established a relationship between CSSMSE and a school in France. CSSMSE faculty participated in a four-day forum in summer 2021 which evolved into an extended correspondence between the two schools through Google Classrooms and other media.
Outreach to students: Process by which students access benefit:	Identification of potential participants and outreach to students is conducted by CSS-MSE faculty and administration. CSS-MSE faculty members facilitate students' participation in the program as part of the ongoing collaboration with CU
Time period:	faculty. Fall 2021
University faculty, instructor, or staff member: School, department, or unit: CSS-MSE students or staff member:	SEAS
Project/purpose: Outreach to students: Process by which students access benefit: Time period:	This three week program selects certified high school teachers to learn how cutting edge 5g/wireless technology developed as part of the COSMOS program can be integrated into technology courses. Teachers work alongside researchers to build lesson plans that can be replicated by other teachers. was selected from an applicant pool of 20+ teachers. SEAS outreach distributes flyers and email invites to partner schools. CSS-MSE faculty members facilitated students' participation as part of the ongoing collaboration with CU faculty. July, ongoing

University faculty, instructor, or staff member:

School, department, or unit: CSS-MSE students or staff member: Columbia University Irving Medical Center (CUIMC) ; all 10th and 11th grade students

Project/purpose:

For Career Day, a team of New York Presbyterian-Columbia University Medical Center professionals in different medical

fields and at different stages of their careers met with students as part of a medical panel.

Outreach to students:

Occurred as part of CSSMSE Career Day, for which attendance is required

Process by which students access benefit:

CSS students participated in Career Day activities and selected panels of interest to them

Time period:

20-May-22

University faculty, instructor, or staff member:

School, department, or unit:

CSS-MSE students or staff member:

Project/purpose:

Outreach to students:

SEAS

HYPOTHEkids: Columbia Engineering Outreach Programs partners with HYPOTHEkids to implement the HK MakerLab and Bioforce program. HK MakerLab teaches students the engineering design process to solve real world problems identified by the students. Bioforce places students in internships in biomedical labs to learn research skills.

HYPOTHEkids recruits and selects students from local community.

Process by which students access benefit:

Time period:

CSS-MSE faculty members facilitated students' participation as part of the ongoing collaboration with CU faculty.

July-August