



NASA Goddard Space Flight Center
Office of Education

STEM Academic Research Experience Program Description 2018-2019

NASA Education Vision:

To advance high quality Science, Technology, Engineering and Mathematics (STEM) education using NASA's unique capabilities

GSFC STEM Academic Research Experience Goals:

1. Contribute and enhance the educational development and support of high school students in the Science, Technology, Engineering, Mathematics (STEM) disciplines;
2. Attract and retain high school students in STEM disciplines through a progression of NASA educational opportunities; and
3. Build strategic partnerships and linkages with high school students and educators that promote STEM literacy and awareness of NASA's missions.

GSFC STEM Academic Research Experience Student Outcomes:

1. Provides opportunities for high school students to apply STEM academic learning and research in a NASA work environment;
2. Engages and educates high school students directly in NASA STEM disciplines and careers; and
3. Advances high school students' knowledge of NASA missions and the role of GSFC in space exploration.
4. Provides students the opportunity to formally share their experience with a professional research community.

GSFC STEM Academic Research Experience Program:

The purpose of the Goddard Space Flight Center (GSFC) STEM Academic Research Experience Program is to support educational research opportunities that are designed to increase high school student involvement and interest in STEM disciplines. The program provides high school students the opportunity to learn and apply research protocols and processes related to Earth- and space-systems science, computer science, engineering, and technology. Students participating in the GSFC STEM Academic Research Experience Program are engaged in an experiential learning environment that provides students with authentic NASA STEM research experiences. The GSFC STEM Academic Research Experience Program strives to increase the number of underrepresented and underserved students participating in STEM education programs, thereby encouraging more of these students to pursue STEM careers.

Students interested in participating in the GSFC STEM Academic Research Experience Program must first apply to their local school's academic experience programs. While schools may have a variety of names for these types of programs e.g. internship, work experience, career exploration, etc., the main focus for students participating in the GSFC STEM Academic Research Experience Program will be to further support and increase the student's academic research experience in a STEM discipline. Students must meet all school academic experience program and coursework requirements, and be selected by the school to be considered for participation in the GSFC STEM Academic Research Experience Program. Students are required to commit to working at GSFC with a mentor for a minimum of three days a week, 3 hours in the morning or afternoon, over a period of at least ten weeks. Placements may be for fall and/or spring semesters,

beginning approximately by September 24, 2018, and ending May 24, 2019., and are dependent upon student schedules, school requirements, and mentor availability. The Office of Education will work individually with school programs and student requests for academic year research experiences that may have specific schedule and time constraints which do not fit within the minimum attendance requirements. There is no stipend for Academic Year positions.

Student Academic Research Experience Program Requirements:

In general, students participating in the GSFC STEM Academic Research Experience Program must be enrolled in a public (including charter schools), private high school, or state approved homeschool secondary program, have successfully completed STEM coursework by their 11th or 12th grade year, and have demonstrated independent research skills in a STEM discipline. Students selected are generally completing the 11th or 12th grade and preparing to enter an institution of higher education to actively pursue a degree in a STEM field.

A typical applicant meets the following minimum requirements:

1. At least 16 years of age at the start of the experience;
2. Has earned a minimum 3.0 GPA (unweighted); and
3. Is a U.S. citizen.

Academic Research Experience Placement Process:

1. Student applicants must first be accepted by the research experience/mentorship/internship/work experience program at their school. Schools must recommend students for the academic year research experience.
2. The GSFC Office of Education communicates directly with the local school program coordinators to initiate the application process for interested students.
3. Student applicants indicate their interest areas, strengths, and research project topics on their application. Students may submit an un-official copy of their transcript with their application but an official transcript copy will be required prior to placement.
4. The Office of Education reviews all applications submitted by a school for students seeking an academic year research experience to determine the knowledge and quality of the candidate's STEM experience and interest. Interested mentors will be provided the applications to review prior to selection of a student.
5. Once mentor selections are made, the Office of Education ensures that all students are badged, while mentors make arrangements for a workstation, as needed. Additional contact information and school program requirements will be provided for participating mentors during the placement process.
6. The students will be on-center during the period of September 24-May 24 for a minimum of three half-days per week while the school is in session. Student assignments will be an AM or PM placement as their academic schedule allows and in consultation with their mentor. Length of placement will be a minimum of ten weeks. Consistent attendance is an expectation for continuance in the program.
7. High School STEM Academic Research Experience students will complete a research poster and participate in a center poster session at the end of the semester/academic year.

GSFC Office of Education Responsibilities:

The Office of Education is here to ensure high school academic year research experience students have a challenging and engaging research experience. The GSFC Office of Education works directly with schools and students interested in participating in the GSFC STEM Academic Research Experience Program. The GSFC Office of Education provides information and communicates directly with school internship, guidance or career counselors, school and district STEM coordinators and administration in promoting this program.

Schools participating in the GSFC STEM Academic Research Program are required to be in communication directly with the GSFC Office of Education. Schools may not contact members of the GSFC science, technology, engineering and math community directly to discuss and arrange a student placement for the academic year. Interested members of the GSFC science,

technology, engineering and math community are required to work with the Office of Education in selecting and placing high school students within their branch, division or Directorate for the academic year.

The GSFC Office of Education reviews all applications submitted by a school for students seeking an academic year research experience to determine the knowledge and quality of the candidate's STEM interest. The GSFC Office of Education collects and coordinates names of GSFC civil servants in the fields of science, technology, engineering and mathematics interested in serving as a mentor to a high school student applying for an academic research experience. Placement of students with mentors will be based on the student's areas of interest, proposed research and the mentor's field of expertise. Upon selection and placement with a GSFC mentor, the school program coordinator and student will be notified of their selection and coordinate communication between the school, student, mentor and the Office of Education to ensure a successful education experience. The GSFC Office of education will coordinate all badging and onboarding processes of selected students to gain access to a GSFC facility and assist in student orientation and IT security training.

GSFC Mentor Responsibilities:

GSFC mentors participating in the high school academic research experience program are expected to meet with their student on a regular basis to provide mentoring and guidance. Mentors provide support to the student in meeting the student's schools academic research requirements, learning about the research process and offering general education and career advisement. Mentors are expected to guide the student's activities and work with the student to establish project-related goals. Mentors are expected to engage students in meaningful tasks or assignments directly associated with the mentor's NASA project. The experience should benefit the student as well as meet the necessary school curriculum requirements. In preparation for the arrival of the student, mentors will provide a work station (space, equipment, internet access as needed) for the student.

School Responsibilities:

Participating schools must demonstrate a high quality STEM academic experience application and selection process for identifying students with the greatest potential in successfully completing an academic research experience at a NASA facility. During the student application process, the school must provide GSFC a copy of the student's application, current transcript and information about the school's research mentorship/internship/work experience program. School's must remain in contact with the GSFC academic research experience coordinator and mentor and be involved in the direct supervision of the student's progress and attendance on a frequent, regular basis. It is expected that the school remains an active participant and sponsor of a student placed in a GSFC academic research experience position.

GSFC STEM Academic Research Experience Program Contacts:

For questions and requests for additional information about GSFC's STEM Academic Research Experiences, please feel free to contact the NASA GSFC Office of Education at

GSFC-Education@mail.nasa.gov

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