NASA Office of STEM Engagement Focus Areas:

- Create unique opportunities for students to contribute to NASA’s work in exploration and discovery.
- Build a diverse future STEM workforce by engaging students in authentic learning experiences.
- Strengthen understanding by enabling powerful connections to NASA’s mission and work.

GSFC STEM Academic Research Experience Goals:

1. Support and enhance the educational development of high school students in the Science, Technology, Engineering, Mathematics (STEM) disciplines;
2. Provide authentic learning opportunities to attract and engage all students in STEM, including those historically underrepresented and underserved;
3. Attract and retain high school students in STEM disciplines through a progression of NASA educational opportunities.

GSFC STEM Academic Research Experience Student Outcomes:

1. Engage in opportunities to apply STEM academic learning and research in a NASA work environment;
2. Explore a segment of NASA STEM research disciplines and careers;
3. Explain and extend personal knowledge of NASA research missions and the role of GSFC in space exploration.
4. Evaluate the work of fellow STEM ARE students via sharing within 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 focus for students participating in the GSFC STEM Academic Research Experience Program will be to further support and enhance 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/day 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 28, 2020, and ending May 28, 2021, 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 that do not fit within the minimum attendance requirements. Submission of an application does not guarantee a placement at NASA GSFC, as placements will be dependent on mentor availability. 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. Selected students are required to attend an orientation session and will prepare for and present their work to the center in the spring.

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

**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-oficial copy of their transcript with their application, though an official transcript copy may 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/credentialed, while mentors arrange for a workstation, as needed. Additional contact information and school program requirements will be provided for participating mentors during the placement process.
6. At this time, all 2020-2021 STEM ARE placements will be within a virtual environment. Student assignments and schedules will be determined 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. All High School STEM Academic Research Experience students will attend a center orientation session at enrollment and deliver a presentation of their work in the spring.

**GSFC Office of STEM Engagement Responsibilities:**
The Office of STEM Engagement is here to ensure students have a challenging and engaging research experience. The GSFC Office of STEM Engagement works directly with schools and students interested in participating in the GSFC STEM Academic Research Experience Program. The GSFC Office of STEM Engagement 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 STEM Engagement. Because the Office of STEM Engagement manages student engagements for the center, it is preferred that schools and students not attempt to prearrange a student placement for the academic year prior to communicating with the Office of STEM Engagement. Students and school coordinators are jointly notified of confirmed placements. Only placements made in coordination with the Office of STEM Engagement are considered STEM ARE placements. Interested members of the GSFC science, technology, engineering and math community work with the Office of STEM Engagement in selecting and placing high school students within their branch, division or Directorate for the academic year.

The GSFC Office of STEM Engagement 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 stated STEM interest. The GSFC Office of STEM Engagement collects and coordinates names of GSFC personnel 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. In addition to meeting the basic eligibility requirements and submission of a completed application by the application due date, **placement of students with mentors is focused on the student’s areas of interest, proposed research, applicability to NASA GSFC research areas, and the mentor’s field of expertise.** Upon selection and placement with a GSFC mentor, the school program coordinator and student are notified of the selection and communication is initiated among the school, student, mentor and the Office of STEM Engagement to ensure a successful education experience. The GSFC Office of STEM Engagement will coordinate all credentialing and onboarding processes of selected students to gain access to GSFC resources 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 engage students in meaningful tasks or assignments relative to 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 arrange for access to NASA resources (i.e. equipment, IT access, and software, 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 for successfully completing an academic research experience with NASA. 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 STEM Engagement at GSFC-Education@mail.nasa.gov

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