Space Grant is seeking students from all backgrounds & majors with an interest in gaining real-world, hands-on experiences. All levels of experience, first-year to graduate level, should apply.

Spring 2019 Supplemental Positions

1. GLEE
2. STEAM
GLEE

GLEE is a unique mission that involves global collaboration to perform science on the lunar surface. This fall semester students will further the work done from this past summer. Students will work with the diverse team and staff here at COSGC along with students from Cornell University to make this ambitious mission a reality.

GLEE will use palm-sized packages called LunaSats. A LunaSat weighs ~5 grams, is ~0.17 x 4 x 4 cm in size and is flexible. They are Arduino based and have an extensive sensor suite (accelerometer, temperature, magnetometer, gyroscope, pressure, humidity, and GPS) as well as communication and power systems. GLEE will fly 500 LunaSats in a 3U CubeSat to the lunar surface and is scalable if launch conditions allow.

GLEE currently has a team with multiple backgrounds and involves students from engineering, science, space policy/law, business, marketing, media, education, and international relations. While there are some conceptual designs, ideas for marketing and international connections much of this semester will be spent finalizing and developing these aspects carried over from the summer. These details include but are not limited to: creating international connections, developing app, vlog and distribution media, general marketing, iterating on designs for the spacecraft (communication, power, structures etc.), designing missions to be done on the lunar surface with the LunaSats, developing software and electrical power systems, proposal writing, presentations, space policy/law and international law research, creation of briefings for NASA, companies and foreign governments, expansion on budgets and funding models, designing a new iteration of the LunaSats.

Current Job openings:

- GLEE LunaSat
- Open to CU Boulder students

http://spacegrant.colorado.edu/boulderstudents/howtogetinvolved  Updated 10/9/2019
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<td><strong>Project:</strong> GLEE</td>
<td><strong>Available Positions:</strong> 1</td>
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**Description:** Students working with the GLEE LunaSat subsystem will design and prototype LunaSats for use in this mission. Students will be specifically working on RF and antenna design and also designing a PCB to meet the mission requirements.

Majors: Electrical Engineering  
Grade Level: Junior, Senior

**Minimum Requirements**
- Experience with board layout (Altium/EAGLE/Ultiboard/MentorGraphics)
  - a) Specifically, dealing with cross-talk, EMI pick-up noise, etc.
- Interested in RF and antenna design

**Desired Skills**
- Experience in schematic level design (and simulation, LTSpice/ORCAD/MultiSim/MentorGraphics/<insert your favorite simulation package here>)
- Prior experience in dealing with LNAs, and low noise/low voltage circuits
- Signal processing to extract information at low SNRs.
- RF and antenna design experience

**Time Commitment:** 6-10 hours/week
STEAM = STudent Energetic Activity Module

STEAM is a new, four-year project that will include design, build, test, launch, operations, and data analysis. The goal of STEAM is to measure signatures of impulsive coronal heating and examine how this heating in the low corona contributes to the formation of solar streams and acceleration of the solar wind, using an off the shelf x-ray spectrometer. STEAM will fly in space on a larger spacecraft being developed by the Southwest Research Institute on a NASA mission called PUNCH.

Students on the STEAM team this semester will have the following goals:
- Understand the science mission and develop the requirements to achieve them
- Work with our SwRI partners to develop the Interface Control Documents (ICDs)
- Create an initial design concept that meets both the requirements and the ICDs
- Develop a STEAM presentation and give that presentation at the System Requirements Review (location to be determined)
- Create an overall project plan for spring 2020 and summer 2020

Current Job openings:
- STEAM Science
- STEAM Electronics
- STEAM Mechanical
- Open to all Colorado Space Grant Consortium Affiliate Institution students

http://spacegrant.colorado.edu/boulderstudents/howtogetinvolved  Updated 10/9/2019
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<td>Project: STEAM</td>
<td>Available Positions: 1-2</td>
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**Description:** The STEAM Science subsystem will be responsible for researching the science goals and desired mission for STEAM-related to observing signatures of coronal heating mechanisms, and their contribution to the formation of solar streams and acceleration of the solar wind. Students on this team will work with the STEAM science faculty advisor to fully understand the requirements for this type of mission and how to complete the mission using off the shelf x-ray spectrometers.

**Minimum Requirements**
- Strong background in science and physics
- Familiarity with spectrometers
- Interest in learning more about solar physics

**Desired Skills**
- Familiarity x-ray spectrometers
- Background in solar physics and/or astronomy

**Time Commitment:** 8-12 hours/week

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<td>Project: STEAM</td>
<td>Available Positions: 1-2</td>
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**Description:** The STEAM Electronics subsystem will be responsible for developing the electrical and software interfaces with the off-the-shelf x-ray spectrometer that will be used on STEAM. Students on this team will also investigate and help develop the electrical interfaces with the primary spacecraft as well as the other systems on STEAM.

**Minimum Requirements**
- Electrical circuit design background
- Familiarity with RS-232 serial interfaces
- Familiarity with DC power conversion and regulation
- Previous hands-on experience with electrical circuits (class and lab are acceptable)
- Interest in learning more about electrical design for instruments

**Desired Skills**
- PCB design and manufacture
- Previous project experience with electrical systems
- General programming experience

**Time Commitment:** 8-12 hours/week

COSGC [http://spacegrant.colorado.edu/boulderstudents/howtogetinvolved](http://spacegrant.colorado.edu/boulderstudents/howtogetinvolved)  Updated 10/9/2019
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<td><strong>Project:</strong></td>
<td>STEAM</td>
<td><strong>Available Positions:</strong></td>
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**Description:** The STEAM Mechanical subsystem will be responsible for developing the mechanical design for the STEAM instrument box and support systems for all the internal components. Students on this team will also investigate and help develop the mechanical interfaces with the primary spacecraft as well as the other systems on STEAM.

**Minimum Requirements**
- Solidworks experience
- Familiarity with mechanical design
- Familiarity with machining
- Previous hands-on experience with mechanical design (class and lab are acceptable)
- Interest in learning more about mechanical design for instruments

**Desired Skills**
- Actual machining experience
- Previous project experience with mechanical systems
- General finite element analysis experience

**Time Commitment:** 8-12 hours/week