Colorado Space Grant Consortium
Student Positions

This fall semester, COSGC is recruiting only students with very specific experience. Check back spring semester 2021 for more entry-level projects.

Mid - Fall 2020 Positions

1. STEAM
STEAM - Student Thermal Energetic Activity Model

Project Description:
The Student Thermal Energetic Activity Model (STEAM) is a multi-year experiment in collaboration with the Southwest Research Institute (SwRI) to search for signatures of nanoflares and open-field transient release of the solar wind, as well as reconnection based coronal heating mechanisms from the Sun in soft and hard x-ray. The experiment is going on one of four satellites that is part of a NASA SMall EXplorer (SMEX) class mission, PUNCH. The planned instrument delivery is 2022 and planned launch is 2023.

We are looking for someone who can work on STEAM for a minimum of 4 semesters and can work during the summer of 2021 (current sophomores or juniors)

People selected for interviews will be expected to present a 10-15 minute technical presentation related to skills needed for the position.

Any recommended skills not already known can be learned through employment.

US Citizenship is required for all STEAM positions.
**Job Title:** Avionics Team Member

**Position #:** ST_01

| Project: STEAM | Available Positions: 1 |

**Description:** The STEAM Avionics sub-team is responsible for developing the electrical and software interfaces with the commercial off the shelf x-ray spectrometers that will be used on STEAM. Students on this team help develop the electrical interfaces with the primary spacecraft. The tasks include FPGA code and testing, hardware integration into a custom PCB design, and testing and verifying hardware and design choices.

**Required Skills**
- Have previous project experience (e.g. prior Space Grant project, freshman projects, internships, etc.)
- Experience programming and integrating microcontrollers and computers into projects and payloads
- Electrical circuit design background (e.g. Current sensing resistors, Op-Amp, ADC, and comparator setups)
- General Programming Experience

**Recommended Skills**
- Code Development in Linux
- FPGA Experience
- VHDL/Verilog and Quartus/Vivado Experience (e.g. Testbench construction, implementing ADCs and other logic elements, and state machine and data packaging implementations)
- Altium PCB Software experience
- PCB Component Population experience
- Soldering, breadboarding, and prototyping experience
- Familiarity with Serial Interfaces: RS-232, RS-422, UART, SPI
- Familiarity with DC power conversion and regulation (e.g. Converters, Regulations, EMI Filters)

**Time Commitment:** 8 - 10 hours/week

**Type of Position:** Biweekly/hourly paid: $15/hour

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- **Any recommended skills not already known can be learned through employment.**
- **US Citizenship is required for all STEAM positions.**

[COSGC](http://spacegrant.colorado.edu/boulderstudents/howtogetinvolved) Updated 09/03/2020 1:30 PM
That concludes Fall 2020 postings. Please keep an eye out for updates as the semester progresses.