Examples of Past Post-bac Projects

- Exoplanet spectroscopy modeling with the Planetary Spectrum Generator Exoplanet Modeling & Analysis Center and development of the open-access exoplanet software database called the Exoplanet Modeling & Analysis Center.
- Data processing software development for the spectroscopic observing mode Coronagraph Instrument of the on the Nancy Grace Roman Space Telescope.
- Assist in laboratory demonstrations of a prototype Integral Field Spectrograph camera for characterizing Earth-like exoplanets with a future Habitable Worlds Observatory.
- Generate and analyze high-resolution digital elevation models of the Moon to support scientific research and human/robotic exploration.
- Interest in analytical chemistry for a Planetary Protection Research project characterizing organic compounds present in curation and spacecraft assembly areas.
- Work with the GSFC Astrophysics Communications Team to develop outreach materials about the Habitable Worlds Observatory, a future large NASA space telescope.
- Assist in further development of state-of-the-art particle-in-cell and Bayesian Markov Chain Monte Carlo codes to incorporate more physically realistic effects that will explore the foundations of pulsar high-energy emission neutron star and lead to parameter inference on NICER and Fermi data sets. Strong computational affinity is required.
- Assist with the detection and analysis of background active galaxies (AGNs), including any transient objects detected, with an emphasis in X-ray detection and analysis from XMM-Newton and Chandra.
- Become involved in ongoing multi-wavelength studies of the AGN-host galaxy connection and co-evolution and have the opportunity to develop reduction and analysis skills related to a wide variety of data, both imaging and spectroscopy, including XMM-Newton, Chandra, MUSE, Keck, HST, Spitzer, VLASS, and/or JWST.