The Putnam Research Group is developing modern, Python-based tools to analyze and develop novel planetary entry systems. The core tool is a planetary entry trajectory simulation that integrates environmental, vehicle, and flight software models to determine flight performance and assess guidance, navigation, and control algorithms.

This project will continue development of the planetary entry trajectory simulation tool in Python. Development tasks may include:

- Implementation of additional environment and vehicle models
- Verification and validation using existing trajectory simulation tools
- Implementation of guidance, navigation, and control algorithms
- Development of analysis tools

We will also pursue a planetary entry mission concept study to exercise the trajectory simulation tool.

Applicants must have a working knowledge of dynamics and know how to program in Python. Experience with Matlab, version control (git), aerospace trajectory simulation, and guidance, navigation, and control systems is desired. Depending on results, this project may lead to a technical conference paper and/or a longer-term research position.