Schedule for James Guillochon's NESSF proposal: "Detailed Simulations to Address the Unsolved Problems of Lunar Formation."

Year One:

- Finish modifying FLASH framework to include SESAME equation of state and to set up the initial models for simply differentiated planets (core + mantle).
- Complete first high-resolution simulations in FLASH.
- Analyze results of simulations and compare to work of other groups to identify points of similarity and disagreement.
- Write and publish paper documenting the method (Paper I).
- Travel to national conferences to publicize and share the results of Paper I.

Year Two:

- Further modify FLASH framework to include radiative cooling, disk viscosity, and volatile evolution.
- Produce more realistic initial models of both target and impactor, examine how changes in the initial conditions lead to changes in the way the disk evolves.
- Rerun the giant impact simulations with the modified framework, focusing specifically on the evolution of the disk.

Year Three:

- Perform longer-term studies of disk with reduced resolution to identity the parameters most likely to produce an object with the Moon's characteristics.
- Run a high-resolution simulation using the best-case scenario from the low-resolution study.
- Write and publish a detailed results paper (Paper II) of the first simulation that self-consistently produces the Moon from the time of impact, through disk formation and evolution, and finally gravitational collapse.
- Travel to national conferences to share results of Paper II.