

## Intellectual Merit Criterion

### Overall Assessment of Intellectual Merit

Excellent

### Explanation to Applicant

A very strong research proposal addressing a problem of great relevance to LIGO. The science case is well described and presented, and the research plan is both ambitious and achievable.

## Broader Impacts Criterion

### Overall Assessment of Broader Impacts

Excellent

### Explanation to Applicant

The proposed work has the clear potential for significant impact outside of its immediate domain. There is also clear commitment to, and a track record of, public engagement.

### Summary Comments

An extremely strong application in all aspects.

## Intellectual Merit Criterion

### Overall Assessment of Intellectual Merit

Very Good

### Explanation to Applicant

Improvement and extension of CCSN simulations is timely and interesting. This appears to be an exceptionally ambitious project. There is enough detail provided to have some sense of what is being proposed, but also there are questions such as: will the non-SE regime in FLASH impact stability? Will the numerical methods need to be modified meaningfully in the (huge) transition from 1-d to 3-d? A stronger publication history or a couple of more detailed sentences would help gauge the potential success of this project.

## Broader Impacts Criterion

### Overall Assessment of Broader Impacts

Excellent

### Explanation to Applicant

The proposer has good thoughts about broader impacts. The collaborations that this work could produce would be useful. Even more, the creation of Ask-a-Scientist and travel to local schools is quite interesting.

### Summary Comments

This is a strong and interesting proposal from both an intellectual merit and broader impacts perspective. A bit more information might help to assess the chances for success.

## Intellectual Merit Criterion

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**Overall Assessment of Intellectual Merit**

Very Good

**Explanation to Applicant**

Applicant has numerous research experiences (domestically and abroad) resulting in several presentations as well as publications in preparation. The applicant's proposed research focuses on the investigation of explosion mechanisms for specific classes of supernovae. One particular elucidation from the applicant would be to address in more detail the challenges of impediments in the transitioning of the equation of state to a new regime. Reference letters speak to the applicant's drive, independence, and skill.

**Broader Impacts Criterion****Overall Assessment of Broader Impacts**

Excellent

**Explanation to Applicant**

The applicant's involvement with student organization activities as well as with undergraduate research journal activities shows that the applicant recognizes the importance of public outreach. Applicant also notes the importance of creating and developing collaborative activities to engage the public.

**Summary Comments**

The applicant demonstrates a very good commitment to scientific research as well as an excellent commitment to engaging the general public.