This funded application was a resubmission that addressed the following comments from the previous year's application (which received an Honorable Mention).

Reviewer 1

Overall Assessment of Intellectual Merit: Very Good
Explanation to the applicant:
The applicant started her research training early when she's at high school. She then continued her research training in the same lab while attending Columbia University and later in another lab. She has so far demonstrated her capability in basic science research and contributed significantly to a review paper. She co-presented two posters and developed her independent project. Her academic record and references are good. The research proposal could be strengthened if incorporate how results will be interpreted and their implications.

Overall Assessment of Broader Impacts: Fair
Explanation to the applicant:
The applicant has participate some out outreach programs and is an associate editor of the undergraduate research journal in her school. However, the application could be greatly strengthened if the applicant demonstrates her initiatives in outreach activities and outline specifics of future plan.

Reviewer 2

Overall Assessment of Intellectual Merit: Excellent
Explanation to the applicant:
This is overall an excellent candidate. Good academic preparation, stellar research experience, excellent letter of recommendations. Writes very thoughtfully. The proposal is very well written, well specified hypothesis and aims. Clearly articulated research path.

Overall Assessment of Broader Impacts: Very Good
Explanation to the applicant:
While the broader impacts from the undergraduate times are relatively limited, the applicant is presently involved in broad range of activities. These activities are "outside of the box" showing applicant serious involvement in this type of activities.

Reviewer 3

Overall Assessment of Intellectual Merit: Very Good
Explanation to the applicant:
The applicant should be congratulated for the academic and research achievements earned thus far. The applicant has co-authored a book chapter and has contributed to several conference presentations. The candidate will be a very good graduate student and successful scientist. The Plan of Research is an interesting project based on the applicant's (and others') laboratory work. The hypotheses are logical and the experiments should test the hypotheses appropriately; however, it is unclear how the project will progress if the first Aim is not supported. What if the RISC components are not affected?

Overall Assessment of Broader Impacts: Very Good
Explanation to the applicant:
The applicant already has participated in outreach activities, such as helping younger people in science and bringing science to disadvantaged neighborhood. Moreover, the candidate has enhanced scientific and technical understanding by serving as an editor of a journal. The candidate is strongly encouraged to continue these activities. As a graduate student, the candidate is encouraged to take a leadership position in these broader impact areas (e.g., initiating programs and leading outreach activities). Furthermore, the candidate is encouraged to consider the impact of the present research on society in general. How might this type of synaptic plasticity benefit all?