**Intellectual Merit**

**Overall Assessment: Excellent**

The applicant has a very strong undergraduate background both in coursework and research experiences. The

applicant clearly has considerable intellectually maturity and depth. The long-term aim to use biochemical

techniques to study protein evolution is a strength. The proposal is well-written, and is demanding but

reasonable for a graduate student. However, it is not clear how innovative the proposal truly is. The

inclusion of alternatives for the event that the hypotheses are not born out would also improve the proposal.

**Overall Assessment: Excellent**

The applicant’s potential for successful career in science has been recognized through numerous scholarship

awards. This applicant has extensive research experience in several areas of biophysics experiment and

modeling and is a co-author of one publication. The research plan and personal statement are clearly

formulated and well-written.

**Overall Assessment: Excellent**

The applicant has a great deal of undergraduate research experiences at Amherst, U. Arizona, Rockefeller

under REU and HHMI, and proposes an experimental plan to understand how two proteins from the same

superfamily with similar catalytic machinary have evolved different catalysis reactions. Her academic record

is stellar.

**Broader Impacts**

**Overall Assessment: Good**

The applicant has a strong track-record in tutoring, in public dissemination of scientific knowledge and in

promoting cross-disciplinary engagement. However, these considerable strengths are weakened by a lack of

plans to continue in such broadening activities.

**Overall Assessment: Very Good**

This applicant has demonstrated commitment to broader impact activities and is likely to continue making

important contribution in this area. A research plan that links into outreach activities would make the

application even stronger.

**Overall Assessment: Very Good**

The applicant has been involved in a spectrum of outreach activities including teaching, scientific writing,

and mentoring students in which she exhibited great leadership as a HHMI fellow that fostered undergraduate

research at Amherst.