Intellectual Merit Criterion

Overall Assessment of Intellectual Merit
Very Good

Explanation to Applicant
The applicant has a very good academic record. She has received multiple academic honors and has given multiple research presentations. She also has substantial research experience relevant to the proposed research project. The research proposal is to use CRISPR based gene knock down for back pain treatment. The idea is interesting, and the short-term research plan is well reasoned. However, the long term goal of the project remains less clear. Will in vivo validation studies be pursued?

Broader Impacts Criterion

Overall Assessment of Broader Impacts
Very Good

Explanation to Applicant
The applicant has demonstrated a strong commitment to and a good track record of broader impact activities.

Summary Comments
Overall the applicant has demonstrated very good research and education potential. The intellectual merit and broader impact components of the proposal are very good. It is less clear how the broader impact activities will be integrated with the proposed research activities.

Intellectual Merit Criterion

Overall Assessment of Intellectual Merit
Excellent

Explanation to Applicant
The applicant has a strong academic record and has evidence of outstanding training in research. She is well-qualified to perform the proposed study. The research plan is creative and well-organized and has the potential to have a significant impact by increasing our knowledge and understanding of low-back pain and offering potential treatment options.

Broader Impacts Criterion

Overall Assessment of Broader Impacts
Excellent

Explanation to Applicant
The applicant has an excellent track record of outreach and service that are complementary to her research goals. She has participating in numerous activities related to engineering education, including acting as an engineering ambassador, and is dedicated to helping support and retain underrepresented groups, including women, in engineering. Her research has the potential to benefit society by improving the health and well-being of those with low-back pain.

Summary Comments
The applicant is has an outstanding record of academic achievement, research expertise, and outreach activities. Her past accomplishments and future goals align nicely with the mission of the NSF.
Intellectual Merit Criterion

Overall Assessment of Intellectual Merit
Very Good

Explanation to Applicant
The applicant has an excellent academic background while garnering a number of academic honors. They have also shown productivity through a number of oral and poster presentations. The applicant has an interesting research proposal that plans to use the CRISPR system to inhibit cytokine receptors involved in inflammation and other processes in the intervertebral discs. The research statement was well structured, though the scale of the proposed work was quite large.

Broader Impacts Criterion

Overall Assessment of Broader Impacts
Very Good

Explanation to Applicant
The applicant has served as an engineering ambassador at the and been active in outreach activities through SWE. They have also been active in Tau Beta Pi. They have shown initiative by creating an outreach committee within the grad student advisory committee, with the aim of enhancing STEM outreach. The applicant has also been active in teaching in the role of a TA.

Summary Comments
The applicant seeks to pursue fundamental and translation research in the field of back pain. They have shown scientific productivity as well as broader impact through their outreach activities