

Intellectual Merit Criterion

Overall Assessment of Intellectual Merit

Excellent

Explanation to Applicant

The application has a strong intellectual merit component. The proposer has done outstanding work on the topics he plans to study and has showed great potential in other works that came off two different REU programs in fields that are neighboring the area proposed. He has the necessary background and skills to pursue this plan.

Broader Impacts Criterion

Overall Assessment of Broader Impacts

Very Good

Explanation to Applicant

The author has done some tutoring work and plans to continue this type of involvement that fosters curiosity among students.

Summary Comments

The application is strong on the intellectual merit side with an applicant that presents aptitude and drive to succeed. The broader impact could be stronger, especially through volunteering activities.

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Explanation to Applicant

Issac has a very extensive research plan. It is clear from his plan and his recommendations, that he has a substantial background in mathematics. In addition to the requirements for his BS, he has also taken many graduate level mathematics courses and done very well in these courses. His research experience sets him up well to be successful in graduate school.

Broader Impacts Criterion

Overall Assessment of Broader Impacts

Excellent

Explanation to Applicant

He has a real passion for mathematics and wants to be a professor to inspire others in mathematics. He is involved in his AWM chapter and also has a passion for pedagogy. Will blend his love of mathematics with his love of physics.

Summary Comments

Excellent candidate. Definitely one of the top applicants.

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Explanation to Applicant

The applicant makes a strong case for a successful research career. The statement demonstrates a strong skill in self-learning and investigation skills. The applicant has experienced research in various forms, including lab sciences, theoretical physics, and mathematics. The applicant has a strong course record at the home institution and already presented at national conferences. The particular jump from theoretical physics to algebra and Lie theory is organic growth and shows the intentional studies and interests. I find the intellectual merits of the proposal in the top one-third of the proposals I reviewed.

Broader Impacts Criterion

Overall Assessment of Broader Impacts

Good

Explanation to Applicant

The broader impacts of the proposal have a piece in applications of mathematics and also in societal impacts. The already mentioned transition from physics to mathematics can be vital to deepen such interaction in graduate studies. The second piece in broader impacts is reasonable and comparable to similar proposals. The candidate highlights outreach activities in this part.

Summary Comments

Overall, the candidate makes a strong case for a self-sustainable research profile. Both the coursework at the home institution and summer REU programs show a strong background in mathematical research. Participating in 3 different summer REUs (2 in a single summer) is a serious commitment, and it looks like the candidate maintained a coherent story around these programs. Overall, I place this proposal in the top one third among the ones I reviewed.