

Intellectual Merit Criterion

Overall Assessment of Intellectual Merit

Excellent

Explanation to Applicant

The candidate has an exemplary record of research accomplishments, scholarships, and awards, especially in light of the early stage of his research career. The applicant articulates a strong overarching vision for his research program in a clear and well-motivated research proposal. Through his prior research experiences, it is clear that the candidate has the expertise and motivation to meet his experimental objective of refining current genotype-phenotype maps of nutrient pathways in kale. Reference letters describe a highly motivated, skilled, and independent undergraduate student who is already functioning at the graduate level. The candidate has a solid academic record, including advanced courses in fields directly related to the proposed work.

Broader Impacts Criterion

Overall Assessment of Broader Impacts

Excellent

Explanation to Applicant

The applicant demonstrates incredible enthusiasm for science education and a mature awareness of the importance of scientific communication. Through his active roles as a teaching assistant, involvement in public outreach, and political activism, he has already demonstrated his strong commitment for translating the broader impacts of scientific discoveries into the public realm. The broader impacts of his proposed research are especially noble, involving advocating for the adoption of bioengineered kale and communicating the importance of genetically modified crops to politicians and farmers. Although ambitious, the candidate's background in communication, philosophy, education, and comedy combine to make him uniquely suited to the task.

Summary Comments

From the perspectives of both intellectual merit and broader impacts, this candidate exhibits outstanding scientific promise.

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Explanation to Applicant

This is an excellent to outstanding candidate with a strong research plan in modeling genotype-phenotype relationships in plants using quantitative genetics and systems biology techniques. Candidate has excellent experience and background in the proposed area of research with several conference presentations, a co-author publication, and several first author manuscripts in preparation. Strong letters of support and solid research plan makes this an excellent to outstanding application.

Broader Impacts Criterion

Overall Assessment of Broader Impacts

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Explanation to Applicant

The broader impacts of this proposal are equally good. Candidate has demonstrated track record of participating in several outreach activity and proposes a plan for educating politicians and the public by participating in the Alliance for Science

program at Cornell. The applicant's unique background in science and philosophy places him in a unique position to accomplish the proposed activities.

Summary Comments

Excellent applicant. No major weaknesses noted.

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Explanation to Applicant

He has developed a very creative research project that integrates data from different levels of inquiry. His proposed work has a sound rationale. His research statement is well written - one of the best I have reviewed. He has an extensive and diverse research experience as an undergraduate. He has disseminated his research by publishing in peer-reviewed journals (one published, one in review, several in preparation) and presenting his work at several meetings. This applicant has a very strong academic record and received several awards.

Broader Impacts Criterion

Overall Assessment of Broader Impacts

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Explanation to Applicant

He is involved a number of community outreach activities that are highly effective. He took a lead role in a number of these activities. His future plans for outreach and community engagement are excellent.

Summary Comments

A very strong applicant with great potential to be a leader in the field. The potential for broader impacts of his research in agriculture and his outreach activities is very high.