

Intellectual Merit Criterion

Overall Assessment of Intellectual Merit

Excellent

Explanation to Applicant

Exploring the mechanisms of salt-induced T cell polarization into T helper 17 cells remains a real challenge in the cell differentiation community. Even if the problem itself is not new, this new approach provides a deeper study of such a process. All reference letters confirm that the applicant's research is at a very high level. Her outstanding academic record combined with her research productivity makes her a great potential researcher. The research project is very consistent with her strong and valuable research experience. The applicant's ability to share knowledge with others is exceptional in spite of heavy workload (full time student, peer academic coach, tutor, and research assistant). The research project and research plan is reasonable and achievable based on what she has already done in the past. The preliminary work is very well presented here and demonstrates good communication skills (4 papers submitted with 1 as 1st author). The proposal could be improved by strengthening the computational component. The applicant focused on presenting computational and statistics tools but does not satisfactorily provide the computational methods involved, which are necessary in order to provide reliable result (analysis, prediction). However, her references indicate a strong ability for the applicant to overcome these limitations.

Broader Impacts Criterion

Overall Assessment of Broader Impacts

Excellent

Explanation to Applicant

The applicant's previous experience and research outcomes shows her ability to handle a research project involving multiple disciplines. The applicant is involve in an inter-institutional, international, and interdisciplinary research environment and seems to be very good at managing it (see references and results). The applicant's achievements in training and teaching demonstrate a very good academic. These achievements include peer academic coaching, [REDACTED], tutoring, and leading women in science events. The applicant includes a detailed description on how she intends to continue these kind of activities, and defines a very good development plan for improvements to these activities.

Summary Comments

The applicant's academic record and her research outputs, combine with her ability to work in a large interdisciplinary environment makes for a very good potential innovative researcher. The applicant's passion in sharing her knowledge with others (communication, training, volunteering, tutoring) makes for an excellent teacher. Even if the project and the research plan lacked in computational details, the applicant's experience for her level of study play in her favor, I recommend to encourage this applicant by funding this proposal.

Intellectual Merit Criterion

Overall Assessment of Intellectual Merit

Excellent

Explanation to Applicant

The applicant's academic preparation is excellent. She has won several scholarships and awards. As an undergraduate student she has presented her work at several national meetings. All letters of recommendations are also quite strong. Interleukin 17 (IL-17) producing T helper 17 (Th17) cells are highly regulated pro-inflammatory cells that are activated in infectious, autoimmune, and

cardiovascular diseases. How immune cells sense and respond to their environment is a basic fundamental question that needs further exploration. Research proposed in this application will explore mechanisms of salt-induced T cell polarization into Th17 cells. This is a very well written, hypothesis-driven research statement.

Broader Impacts Criterion

Overall Assessment of Broader Impacts

Excellent

Explanation to Applicant

Research proposed in this application has implications in understanding how environmental changes impact the immune system and is therefore relevant to public health interest. The applicant intends to engage in outreach activities to explain the public how environmental changes impact the immune system and influence human health. In addition, the applicant is involved in promoting STEM disciplines through Big Brothers Big Sisters events.

Summary Comments

Research proposed in this application will explore mechanisms of salt-induced T cell polarization into Th17 cells. This is a very well-written application from a highly accomplished applicant. BI/community engagement section is also well described.

Intellectual Merit Criterion

Overall Assessment of Intellectual Merit

Excellent

Explanation to Applicant

The applicant has an excellent academic record and has great potential to succeed in graduate school. The applicant has extensive research experience, which resulted in many presentations, publications in preparation and awards. The applicant provides a solid research plan with a thorough review of the literature which included the broader impact of the proposed research. The applicants references offer strong evidence of the applicants potential success.

Broader Impacts Criterion

Overall Assessment of Broader Impacts

Excellent

Explanation to Applicant

The applicant provides an in-depth research plan as well as explains the potential impact on a broader audience. The applicant has been involved in community outreach that serves to education the public about science. In addition, the applicant has shown long term outreach for enhancing minority access to stem and also demonstrates current and future commitment.

Summary Comments

Based on this application, the applicant has a distinguished record of helping students and the community. The applicant has great aptitude for graduate studies and the potential for success. The applicant has many qualities and desire to be a successful research scientist.