

## Intellectual Merit Criterion

### Overall Assessment of Intellectual Merit

Excellent

### Explanation to Applicant

Strengths: This proposed work is important and timely, given the current reduced knowledge on the system, as well as the potential economical (and natural) losses associated with it. Besides this, the research proposed here also can illuminate more conceptual questions, such as what contributes to driving arms-races, and what genes are involved in it, especially in fungus-like species, for which there is usually not a lot of data available. The application and research it includes align very nicely with the career path that the applicant has been following, which suggests that there is a high likelihood that this award will lead to a successful research outcome and a positive impact on the applicant's career. Weaknesses: NA

## Broader Impacts Criterion

### Overall Assessment of Broader Impacts

Excellent

### Explanation to Applicant

Strengths: The applicant has been very strongly involved in a large number of community activities, most of them directly related to his professional career. As stated both in his application, as well as the letters of reference, the applicant has held leadership positions in large organizations, but has also been strongly involved in local projects and activities. The application also demonstrates that the applicant has been a strong ally and mentor for minorities and underrepresented groups, as well as a successful science communicator. Following on this career-long community involvement, the application also plans on developing a bioinformatic tool to allow digesting and accessing geospatial molecular results to the general and specialized public. For this, the application includes integration of minority groups in the evaluation of the bioinformatic tool and exposure to the research topic. Weaknesses: The Broader Impact activities proposed here are addressed very shortly, and it would have been nice to have a bit more details on whether some of the contacts with these groups had been already done, and if they had agreed to participate.

## Summary Comments

This is a very strong application, which has been carefully and clearly written, and which is easy to read and follow. The proposed research and broader impact activities are aligned with the applicant's career path and are a logical next step in their work. The application includes very strong reference letters, as well as a clear demonstration of a long-term commitment to improving the access to science for the general public and underserved/minority populations.

## Intellectual Merit Criterion

### Overall Assessment of Intellectual Merit

Fair

### Explanation to Applicant

The applicant has a first author publication in review and has multiple undergraduate research experiences but does not clearly state their roles in the various projects or their methods and results. Letters of recommendation are good and provide more information on the applicant's previous research projects and skills than the personal statement. The introduction for the research proposal is fairly applied and does not provide the broader biological insights to be gained by studying the population genetics of the fungal pathogen that causes Sudden Oak Death. The proposal would be stronger with more information on the proposed

analyses and sampling design. Also, there is not much information on how the applicant hopes to study genome evolution and its association with pathogen emergence.

## Broader Impacts Criterion

### Overall Assessment of Broader Impacts

Good

### Explanation to Applicant

Broader impacts are good. The applicant has taught two R workshops at an international conference, is developing open source software, and is involved in two minority-serving organizations. Future broader impacts would be stronger with more information on how research results would be disseminated to policy makers and mentoring/training plans for the high school students.

### Summary Comments

The applicant has good computational skills but the research proposal is fairly applied and does not clearly explain how the overall research goal will be achieved. The applicant is clearly dedicated to increasing representation of underrepresented groups, but the proposed broader impacts could be stronger with more concrete plans.

## Intellectual Merit Criterion

### Overall Assessment of Intellectual Merit

Excellent

### Explanation to Applicant

The applicant has a strong academic record including honors and scholarships, as well as previous research experiences during undergrad. Engagement with the scientific community through scientific presentations and membership in scientific communities. Well written proposal with clear hypotheses/predictions and supporting experimental methods.

## Broader Impacts Criterion

### Overall Assessment of Broader Impacts

Very Good

### Explanation to Applicant

The applicant proposes to study an important plant pathogen (SOD), and results will have potentially broad applications including conservation and agriculture. The applicant proposes to develop open-source web application to publicly share data collected from this work.

### Summary Comments

Very good proposal and application package. The applicant clearly has the potential to be successful.