Efficacy of a Travel Award Program to Increase Diversity in Evolutionary Science

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Introduction
In the field of evolutionary science there are exceptionally low levels of racial/ethnic diversity. Diversity in science refers to cultivating talent, and promoting the full inclusion of excellence across the social spectrum. Diversity within the scientific community is essential because it facilitates specialization, invigorates problem solving, and balances biases. Various programs have been developed in order to increase diversity in evolutionary science. The Undergraduate Diversity at Evolution (UDE) is a conference travel award program in which underrepresented undergraduate students attend the annual Evolution meetings to present a poster and participate in various activities. This study focuses on evaluating the efficacy of the program to increase diversity in evolutionary science.

Results
Overall, a total of 170 people responded to the survey. Of these 170 responses, 150 were used in data analysis (20 were considered invalid/incomplete). The majority of people who responded said they heard about UDE through their professor or research advisor. Of those 150 respondents, 92 were award winners and 58 were non-award winners. The 92 awardees represent 36.2% of the total number of award winners since 2001, and the 58 non-awardees represent 12.5% of the total number of non-award winners since 2001. The average level of confidence in their answers on a scale of 1-10 was 7.77.

Career sectors were represented with the majority (~60%) of respondents currently within Academia (Fig 2). Within Academia, shown in Fig 3, the majority were still students. Representation from both general career sectors and within academia specifically were found to have no significant difference between award winners and non-award winners. Nearly 55% of non-awardees were White and 43% of awardees were White (Fig 4). There were twice as many female as male respondents (Fig 8). This data was then compared to the number of males and females that have attended the conference in order to determine the accuracy of representation. The difference between the respondents and attendees was insignificant, coming down to a difference of an overrepresentation of 2 more females.

About 40% of awardees of the travel award had received at least 1 other award compared to only 12.7% of non-awardees having received any awards (Fig 5). Since 2001, students have applied from 98 different schools, with the highest number of students coming from University of California, Berkeley (Fig. 7). When asked how important the field of evolution is to their current position, far more award winners responded that evolution ranks ‘very important’ (value of 5); however, more award winners also ranked evolution as ‘unimportant’ (value of 1). In addition, the mean of the ranking of importance of non-awardees was slightly higher than that of awardees.

After attending the conference, it was seen that 88% of participants made at least 1 contact and of those, 72% said they followed up with at least 1 contact within 6 months of attending the conference (Table 2). The majority of respondents (94%) began their education with a Bachelor’s Degree and 40% of those went on to receive a PhD at some point (Fig 6). 88% of awardees stated that if they had not received funding from UDE they would not have been able to attend the conference (Fig 10).

Discussion
The results of this study are a first step in evaluating the efficacy of the UDE travel award. In regards to ethnic diversity, almost half (43%) of the awardees were White. This result raises a concern as the main focus of the travel award program is to increase the diversity within evolutionary sciences. However, this value was lower than the percentage of White non-awardees, which was 55% (Fig 4). Thus, the UDE funding did help increase the diversity slightly when comparing those selected for the award and those who were not, yet it still may be necessary to re-focus advertising of the award to broaden the diversity of the participants.

Regarding the influence of the conference, 64% of respondents continued on in their careers to receive/pursue a PhD after their Bachelor’s, which may have been influenced by attending and furthering their interest at the conference (Fig 6). However, these full results can not be concluded without further analyzing how participants’ ranked the conference’s influence on their area of interest in school. For those that attended the conference, the number of participants that made contacts and kept up with the contacts is very high and could be considered a major success/influence of the conference.

The diversity among what school students applied from is very high and widespread all across America, with some applying internationally (not shown in Fig 7). Awardees of the travel award were found to have received far more awards than the non-awardees, which may imply the conference assisted in furthering the awardee’s success in their field. An overwhelming 88% of awardees would not have been able to attend the conference had they not received funding, which shows a success in attracting those who truly needed the funding (Fig 10). Results of this study will aid in selecting future awardees and in deciding the agenda and set-up of the conference program in future years.

References

Methods
In order to collect data on the efficacy of the conference, a questionnaire was created involving 58 questions which covered education, careers, identifying information, and various components of the conference. The questionnaire was then sent out to all awardees, applicants, and attendees of the conference from 2001-2016 (Table 1). With completion of the survey there was an incentive of either a $10 Amazon gift card or donating the $10 towards a future UDE awardee to receive funding to attend the conference, as well as an entry into a random drawing to win a $50 Amazon gift card. A total of 472 surveys were sent, we received responses. N/A indicates the UDE program was not run that year.

Acknowledgements
The original idea for this project came from the NESC Catalysis meeting with Judi Brown Clarke, Joseph Graves, Jr., Louise Mead, and Jory Weintraub. Thanks to Chris Brennan for his beginning work on the project. Funding for this research study was provided by an internal BEACON grant to Alexa Warwick. The UDE program was originally conceived and organized by Scott Edwards and Richard Kliman. The UDE travel award program is currently funded by SSE and coordinated by BEACON. To learn more about the program visit www.beacon-center.org/ude