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**AAO Foundation Final Report Form  
(a/o 5/31/2017)**

Type of Award: *Orthodontic Faculty Development Fellowship Award*

Name(s) of Principal Investigator(s)

*Xingzhong(John) Zhang, Jack Sheridan, Mark Alarbi, John Rumble*

Title of Project

*Comparison of Facial Soft Tissue Changes in African-American Patients Treated with Extraction and Non-extraction using 3D Facial Imaging*

Period of AAOF Support (e.g. 07-01-18 to 06-30-19):

*Initial approved period: 07-01-2014 to 12-31-2016*

*Approved No Cost Extension: 01-01-2017to12-31-2017*

Amount of Funding

*\$15,000.00*

Summary/Abstract of Completed Project Results

*With generous support from AAOF, the principle investigator was able to reach the majority of the proposed short-term goals in 2015. Attending the proposed educational courses benefited me and my residents significantly. This fellowship helps me to excel in my career as an academician, and surely will continue to benefit our residents/dental students as well as our profession.*

*This is my 8<sup>th</sup> year of teaching as a full time orthodontic faculty member, and most of the set mid-term career goals have been reached. I became a fellow of the Tweed Foundation in October 2016, and became an affiliate member of the Angle Society Midwest Component in February 2017. From 2014 to 2017, I reviewed 6 to 7 manuscripts for AJO-DO annually and also reviewed for a few other peer-reviewed journals. All these achievements are at least in part due to OFDFA award.*

*The purpose of the proposed prospective study was to evaluate the changes of facial soft tissue in African-American patients that occurred during orthodontic treatment using 3D facial imaging. Both adults and adolescents were planned to be recruited into this study. The estimated sample sizes were 80 adults and 120 adolescents, with half of each group being extraction and non-extraction cases. Each recruited subject was asked to take three-dimensional stereophotographs using 3dMDface™ Sterocamera System both before orthodontic treatment and after debonding. This research project was initially planned to be finished in December 2016. Due to subject recruitment challenges, a no-cost extension (NCE) was requested in 2015 and graciously granted. Unfortunately, due to several unexpected factors, this project was not able to be*

completed. The 3dMDface™ Stereocamera System broke down soon after the NCE was approved, and there were no funds to support the expensive annual maintenance fee. In February 2017, I resigned from my position at Jacksonville University to move to my current institution, and the research project was prematurely terminated. As most of the acquired 3D facial imaging was taken at the pre-treatment time points, no meaningful analysis could be done.

Although this research project could not be finished, I learned several lessons in the process of conducting this study, and also gained some experience from it. I found that the study design for this project might be too ambitious, the sample size might not be practical enough, the time allocation might have been underestimated, and the difficulty of recruiting enough subjects was not completely foreseen. All these lessons will help me to develop better research projects in the future.

Response to the following questions:

1. Were the original, specific aims of the proposal realized?

*The majority of the proposed short- and mid-term career goals have been realized. I have completed the proposed professional courses and have attended relevant conferences including AAO and regional annual meetings. I have reviewed about 6-7 manuscripts annually for AJO-DO from 2014 to 2017, and have also reviewed for some other peer-reviewed orthodontic journals. Consequently, I became a more experienced reviewer. My quality of teaching and clinical skills has also steadily improved. However, due to multiple unanticipated factors, the proposed research project was not able to be finished.*

2. Were the results published?

- a. If so, cite reference/s for publication/s including titles, dates, author or co-authors, journal, issue and page numbers
- b. Was AAOF support acknowledged?
- c. If not, are there plans to publish? If not, why not?

*The principal investigator planned to publish the expected results. Unfortunately, due to multiple obstacles encountered during the funded period, the research project was not able to be completed. Consequently, no results were able to be published.*

3. Have the results of this proposal been presented?

- a. If so, list titles, author or co-authors of these presentation/s, year and locations
- b. Was AAOF support acknowledged?
- c. If not, are there plans to do so? If not, why not?

*The principal investigator planned to present the expected results at the SAO/AAO annual meeting. Unfortunately, the research project had to be terminated due to my job transfer; since most of the acquired imaging was taken only at the pre-treatment time point, no meaningful results can be presented.*

4. To what extent have you used, or how do you intend to use, AAOF funding to further your career? Accounting for Project; i.e., any leftover funds, etc.

*This generous support from the AAOF has given me the opportunity to attend the Orthodontic Mini-residency at University of Washington and the Mini-residency of TMD and Oral Facial Pain at University of Kentucky, helping to cover tuition and other costs. These two week-long courses have offered me a chance to interact with many outstanding orthodontic educators and clinicians, as well as to improve my instructional skills. The rest of this award also allowed me to pay off a part of the student debt generated during my orthodontic residency. I greatly appreciate the support from AAOF, and appreciate all who generously contributed to the AAO Foundation in various ways. This award strengthens my commitment to serve the orthodontic academia, and I will completely support AAOF in the future whenever needed.*