



2024 RAA
Dr. Christine Esposito, University of North Carolina

AAOF Award Synopsis

Title: Longitudinal Outcomes of Bone Anchored Maxillary Protraction Treatment

Principal Investigator: Dr. Christine Esposito, University of North Carolina

I am the principal investigator of our study, titled Longitudinal Outcomes of Bone Anchored Maxillary Protraction Treatment. I am currently a third-year orthodontics resident at the University of North Carolina at Chapel Hill. I received my bachelor's degree at Gettysburg College and completed my dental training at the University of Pennsylvania. Prior to beginning orthodontics residency, I practiced general dentistry in the United States Air Force for four years and completed a one-year advanced education in general dentistry residency. I served overseas in South Korea and Italy and was fortunate to be able to travel to many countries throughout this time. Outside of orthodontics, I am an avid runner, and enjoy spending time outdoors on local hiking local trails, skiing or exploring National Parks.

At UNC Orthodontics, I am a member of the Jacox Lab and have focused my research on the management of Class III malocclusion using bone-anchored maxillary protraction (BAMP) with miniplates. Typical management of Class III DFD involves intervention from a young age with reverse pull headgear; if unidentified early, moderate and severe cases typically require orthognathic surgery to correct, which is highly invasive and comes with significant risk. The development of BAMP for orthodontic practice provides an opportunity to intervene during the adolescent growth spurt, with the potential to help many patients avoid orthognathic surgery. BAMP is a minimally invasive surgical procedure that involves placement of four miniplates in the maxilla and mandible to which intermaxillary traction is applied with Class III elastics. Although this technique has been shown to reduce the severity of Class III skeletal relationships without significant dentoalveolar compensations, its adoption amongst orthodontists has been relatively limited, likely due to an incomplete evidence base.

Therefore, the objective of this study is to evaluate whether BAMP improves skeletal jaw relationships and reduces the incidence of orthognathic surgery in adolescence. We will assess the long-term effects of BAMP on skeletal and dentoalveolar relationships in Class III patients compared to a control group before and after treatment using cephalometric measures. Additionally, we aim to determine definitive treatment modalities (surgical vs. non-surgical, one-jaw vs. two-jaw surgical procedures, extraction vs. non-extraction) in Class III patients treated with and without BAMP.

I believe orthodontic education will benefit from this AAOF award because it will aid in research that will help providers practice evidence-based dentistry. The existing research surrounding BAMP is lacking longitudinal data and randomized control trials, which makes treatment planning more challenging for clinicians treating growing Class III patients. In fact, there are some orthodontic education programs that do not utilize BAMP at all in their Class III treatment protocols, which further substantiates the need for a more robust evidence-base.

The foundation is important to this project specifically because the UNC dental database is extremely large and contains many patient records to screen for inclusion. This funding will enable us to not only retrieve the specific charts relevant our study but continue to maintain and store these records on the database for future projects. Additionally, the funding will assist with publication costs and presentation of our findings at local and national conferences, which will be extremely important in helping to educate orthodontists and oral surgeons about the best indications for BAMP.

AAOF funding has already had a great impact on my career as an orthodontics resident and will continue to do so as I finish up my education and begin practicing. The foundation has provided the funding for other projects within the Jacox lab which first sparked my interest in DFD research. In the future, I hope to stay active as both a researcher and clinician by returning to a university setting to teach and actively engage with research as a future mentor and co-investigator. I hope to utilize my own clinical experiences to inspire future projects that further the orthodontic specialty.