



Research Aid Award

Dr. Christine Bode, University of North Carolina At Chapel Hill

BIOGRAPHY

Dr. Christine S. Bode, DMD is a third-year orthodontic resident at the University of North Carolina (UNC) Adams School of Dentistry. Originally from Gadsden, Alabama, she graduated from Auburn University *summa cum laude* with a Bachelor of the Arts in Chemistry and a Spanish minor. She conducted research within the Chemistry department while at Auburn. She then earned her DMD from the University of Alabama at Birmingham School of Dentistry. She was awarded a 4-year Health Professions Scholarship from the U.S. Air Force and upon graduation, completed a 1-year Advanced Education in General Dentistry Residency at the U.S. Air Force Academy. She served as an active duty general dentist in the U.S. Air Force for 7 years in South Korea, Alabama, and Germany where she was awarded the U.S. Air Forces Europe-Africa Clinical Dentist of the Year. She currently serves at the Seymour Johnson Air Force Base in NC, in the U.S. Air Force Reserves on weekends. Dr. Bode is thrilled to attend UNC for her Orthodontics Residency, where she joined the Jacox lab, studying orthognathic surgical outcomes and speech.

PROJECT DESCRIPTION

Patients with severe Class III dentofacial disharmonies (DFD) seek orthognathic surgery and orthodontic care to address issues with mastication, esthetics and speech. Preliminary data from thousands of DFD patients generated by our colleagues at UNC-CH indicate speech concerns surpass impaired chewing as a motivator for surgery. Articulation errors are nearly twenty times more frequent in Class III DFD patients than the general population. Limited longitudinal, quantitative data exists in current literature on the surgical correction of Class III jaw disharmonies and the improvement in articulation. We plan to assess short- and long-term effects of corrective orthognathic surgery on speech in patients with Class III skeletal malocclusion. We are collecting surgical records paired with audio and lingual ultrasound recording to quantitatively examine speech and tongue movement in DFD patients before and after surgery. Records are collected at 1-month pre-surgery (T0), 3 months post-surgery (T1) and 12 months post-surgery (T2) to quantitatively examine speech and tongue movements. We will compare these timepoints to speech recordings from a control population with Class I skeletal/dental relationships.

1. Statement of how ortho education will benefit from the project

We hypothesize that patients with Class III jaw disharmony who undergo corrective surgery to achieve proportional jaw relationships will have normalization of tongue gestures and consonant sounds. The results of this study will provide the foundation for evidence-based guidelines as to whether orthodontic and surgical interventions will address speech disorders within the Class III DFD population.

2. Why the Foundation is important to your project

Funding from AAOF has allowed me to pursue my research interests during residency and enroll a significant patient sample to address our impactful clinical research questions regarding speech in DFD patients. The funding will allow me to engage with a great team, immerse in the research process and present our findings at the American Association of Orthodontists meeting and in a manuscript.

3. How Foundation funding is expected to or has benefitted your career

Fully engaging with the research process is incredibly helpful as an orthodontist in training. It has enhanced my ability to problem solve, read and understand the literature, from the perspective of someone who has now participated in clinical research. As an orthodontist, I will utilize evidence-based guidelines in my treatment planning and the AAOF has allowed me to conduct research in an understudied but important subject for my surgical patients with speech concerns. Without the AAOF, this valuable work could not occur!