

Research Aid Award

Dr. Nicole Gange, *Case Western University*

Nicole Gange is a third-year orthodontic resident at Case Western University in Cleveland, Ohio. She grew up in Chicago, Illinois and was exposed to orthodontic bonding at a young age. Working with her father, Paul Gange (Reliance Orthodontic Products, Itasca IL), she was able to see the chemistry and production of bonding materials before using this knowledge to complete bondings in residency. Struggling to bond to non-enamel materials, Nicole was anxious to develop a standard method of bonding to these surfaces without damaging them. Bonding to zirconia and porcelain has been an elusive topic since we began to bond to non-enamel substrates. There has not been an agreed upon method to prepare these surfaces, and bond failures are most common at these sites. With the increase of adult patients, there is an increase in non-enamel surfaces we need to bond to. Clinicians are hesitant to mechanically prepare non-enamel surfaces due to inability to re-glaze and restore proper finish of these materials. This project is intended to show we can achieve acceptable shear bond strength levels of brackets bonded to esthetic non-enamel substrates without mechanically roughening the surface, making the orthodontist's job easier and the restorative dentist happier.



The Foundation is the reason this project can be carried out to completion. Without the funding, this project would have had to been scaled down and the data collected would be less than ideal. To successfully complete this project, a certain amount of materials will be needed to carry out the lab bench tests. This project will need substrates to bond to, bonding armamentarium, and brackets. The traditional stipend offered for a thesis budget is \$2,000 and this grant will allow me to carry out my project successfully, without having to cut corners to stay in the parameters of my allotted budget. Although I have not received AAOF funding for previous projects, I am anxious to put this money to good use to further advance the education we know about bonding. I will work my hardest to get this project published and hope to make an impact on the way orthodontists bond to non-enamel substrates around the world. Furthermore, research into this topic has piqued my interest in teaching clinicians the most efficient way to bond. I believe there is a lot to be learned in this department, and I feel like I can contribute to this education. In the future, I would like to continue teaching and give back to the specialty through education at residency programs throughout the country.