

Biomedical Research Award

Dr. Flavio Uribe, *University of Connecticut Health Center*

Biography

I am a full-time Associate Professor, Program Director, and Interim Chair of the Division of Orthodontics in the School of Dental Medicine at the University of Connecticut. I received my Master's Degree in Dental Sciences and Certificate in Orthodontics from the University of Connecticut after receiving my dental degree from the Instituto de Ciencias de la Salud in Medellin, Colombia. Prior to my training in orthodontics, I completed a 3- year residency and fellowship program at the Advanced Education in General Dentistry Program at the University of Connecticut, where I have been in full time academics for the past 17 years.



I am a Diplomate of the American Board of Orthodontics and member of the Edward H Angle Society of Orthodontists. I was a member of the Council of Scientific Affairs for the American Association of Orthodontists (AAO) and currently a member of a committee implementing practice-based research networks for the AAO. I was a past recipient of the Biomedical Research Award from the AAO Foundation in 2012. At the University of Connecticut, I hold the Charles Burstone Professorship.

My research interests focus primarily on mechanisms for tooth movement acceleration and orthognathic surgery. Recently, I have become interested in the role of the microbiome in white spot lesion (WSL) formation. With a collaborator expert in this field, we are planning to evaluate the specific bacterial microenvironment present in patients developing WSLs.

Project Summary

White spot lesions are one of the most common orthodontic sequelae. Substantial efforts have been placed in developing therapies aimed to prevent WSL formation during orthodontic therapy. However, the overall results from different approaches is marginal. With the advent of the human microbiome project on health and disease, a better understanding on the formation of white spots may be elucidated by studying the oral microbiome. The findings of this project may be used for a more targeted therapeutic approach to prevent WSL formation. We plan to evaluate patients that have developed WSL during orthodontic treatment and profile the microbiota using metagenomic whole genome shotgun sequencing. We will compare our findings to a control group without WSL formation.

Importance of the AAOF Award

The AAOF serves as a critical source of funding for orthodontic research. It is well known that funding for orthodontic research from extramural sources such as NIH is very scarce and difficult to obtain. The Foundation fills this gap and helps to advance the knowledge in our field by stepping up to provide the funds for projects that are important to orthodontists. Specifically, these funds will serve to obtain pilot data to apply for funding for a more comprehensive project sponsored from NIH. We are very excited with this collaboration with an expert on the microbiome which will enable us to better understand the inter-bacterial interactions present in WSL formation. We believe that this understanding will eventually lead us to develop specific targets for much needed preventive therapy.