

Orthodontic Faculty Development Fellowship Award

Dr. Meenakshi Vishwanath, *University of Nebraska Medical Center*

Biography

Dr. Vishwanath is an Assistant Professor at the Department of Growth & Development at the University of Nebraska Medical Center, College of Dentistry (UNMC-COD).

She completed her dental and orthodontic education in India. After moving to the United States in 2012, she completed a one-year internship in Orthodontics at University of Texas at San Antonio (UTHSCA), followed by a one-year fellowship and a three-year residency program in Orthodontics at the University of Connecticut, Division of Orthodontics (UConn Health). Upon completion of the residency, Dr. Vishwanath joined UNMC-COD in September 2017.



Dr. Vishwanath, has a Membership in Orthodontics with the Royal College of Surgeons, Edinburgh, and is a Diplomate of the American Board of Orthodontics. Recently, she was appointed as Director of the Orthodontics Program at UNMC-COD.

Dr. Vishwanath is the recipient of several honors and awards. She also peer reviews scientific articles for several international journals. She has several scientific publications, with a heavy emphasis on translational research and clinical applicability of the research results and techniques. Her primary research interests include the biomechanics of tooth movement and, more recently, the implication of the COVID-19 pandemic on the field of orthodontics.

Project Synopsis

Five days after the COVID-19 outbreak was labeled as a pandemic, the American Dental Association (ADA) released a statement recommending that all dentists and dental specialists postpone elective procedures due to the high-risk of viral spread associated with aerosol generating procedures (AGPs). When dental offices were allowed to re-open, the pandemic exposed significant gaps in our knowledge and the paucity of concrete guidelines to follow. The dearth of knowledge has had profound effects for the field of orthodontics as it is often considered minimal to non-aerosol generating, which, though partially true, has led to a lack of consensus on procedures that are aerosol generating. This stems from significant gaps in evidence that limits firm conclusions around contamination for different procedures. To establish standardized procedures and reduce the spread of SARS-CoV-2, broadening of our knowledge on the contamination level of various procedures is vital. The rationale for this study is to further aid in clinical decision making, such as, which procedures require the use of respirators versus

surgical masks, which procedures are at higher risk for the dental health care workers and the patients, and which procedures need additional clinical precautions implemented.

The primary objective of this study is to characterize the aerosol count and size that are generated during common orthodontic procedures. Experimentation will involve performing orthodontic procedures in a closed-room dental operatory on acrylic teeth mounted onto a dental manikin. Orthodontic procedures conducted will include debonding, bonding and repositioning of one bracket. Multiple variations within each of the three procedures along with three randomized repetitions of each variation will also be performed. Two optical particle counters will be used to determine the particle count and characterize the particle sizes. This research attempts to define the term 'aerosol generating procedures in orthodontics' – a term that has been used in research for many years without a definition based in evidence. Additionally, by defining APG's, and correlating it to the available evidence between AGPs and SARS-CoV-2, we can conclude that these procedures will lead to spread of SARS-CoV-2.

Importance of AAOF Funding

As a junior to mid-career level faculty member, I can say without hesitation that the AAOF Faculty Development Awards have been instrumental in the advancement of my career. The funding is essential to my growth as an independent researcher as it not only does it provide support and funding, but also the opportunity to innovate and expand my horizons as a clinician-scientist. The impact that AAOF's support has had on my development as a full-time educator is invaluable, and I am very thankful and honored to be a recipient of this Award.