

Biomedical Research Award

Dr. Laura Jacox and Dr. Sylvia Frazier-Bowers, University of North Carolina, Chapel Hill

Brief Synopsis:

Dr. Laura Jacox and Dr. Sylvia Frazier-Bowers are honored to receive the Robert L. Boyd Biomedical Research Award from the American Association of Orthodontics Foundation (AAOF) for their project entitled, “Efficacy and Acceptability of Antiseptic Mouth Rinses on Salivary SARS-CoV-2 Infectivity.” In this project, we are testing the active ingredients of commercially available, FDA-approved oral rinses in a randomized-controlled trial for their ability to inactivate salivary SARS-CoV-2, the virus that causes COVID-19. We have recently infected COVID-19 positive patients give a saliva sample immediately before the rinse and then after the rinse, at 15-minute intervals for an hour. We can measure the saliva’s viral load (amount of virus), viral replication and infectivity. For the infectivity experiment, we will test how infectious the saliva is with human cells, which is a great indication of whether saliva is capable of spreading the virus. We will also ask participants whether they would be willing to use an oral rinse in healthcare and social settings, to evaluate acceptability. We are hoping to find an acceptable oral rinse that reduces viral load, replication and salivary infectivity for at least 30 minutes: the time of a brief social interaction or healthcare visit.



If we find a mouth rinse capable of inactivating the SARS-CoV-2 virus, people could rinse briefly before situations where masks come off, to decrease the potential for transmission. This would be particularly useful in dental contexts where we work in patients’ mouths. Though infection rates are dropping and vaccinations are occurring at a rapid pace, vaccine hesitancy continues, along with emergence of new variants, making it important for us to identify FDA-approved active ingredients capable of preventing transmission. An oral rinse is also antigen blind, so it would be effective against SARS-CoV2 variants and likely other enveloped viruses like Herpes and Influenza. Many dental offices are already using a preprocedural mouth rinses but we need good data to choose which rinses are most effective against SARS-CoV-2 and for how long. An antiviral oral rinse could become part of standard of care in dental education, practice, and healthcare in general, to prevent transmission of COVID-19.

The AAOF has provided critical funding to support this investigation. If our study identifies promising active ingredients for SARS-CoV2 inactivation, findings will inform current clinical practice, and data can guide development of optimized rinses.

AAOF awards have been pivotal to the launch of Dr. Jacox’s research career, as she has transitioned from resident to assistant professor at the University of North Carolina (UNC). Her AAOF resident, post-doctoral/junior faculty and now biomedical research awards have supported several projects yielding exciting, clinically relevant results, published papers, presentations, and data that have helped recruit NIH funding to her lab. The AAOF awards for Dr. Frazier-Bowers and Jacox have also helped provide research opportunities for orthodontic residents’ education, who contribute to these projects for their master’s degrees. The AAOF is a critical source of support for orthodontic research and the faculty and residents who conduct it.

Dr. Sylvia Frazier-Bowers, DDS, Ph.D., is an Associate Professor at UNC Orthodontics and Assistant Dean for Inclusive Excellence and Equity Initiatives at the UNC Adams School of Dentistry (ASOD). Dr. Laura Jacox, DMD, Ph.D., MS is an Assistant Professor in the UNC Orthodontics group and the Director of the Graduate Orthodontic Research Program (ORP) at UNC ASOD.