

Center Award

Dr. Laura Iwasai, *Oregon Health and Science University*

Synopsis: 2018 GAC International Corporate Center Award

Title: Contribution of Mechanobehavioral, Psychosocial, and Physiological Domains in the Progression of Temporomandibular Disorders

Dr. Laura Iwasaki is Professor and Chair of the Department of Orthodontics at OHSU School of Dentistry, with a volunteer appointment in the Department of Oral Diagnostic Sciences, University at Buffalo School of Dental Medicine. She is engaged in research in the areas of biomechanics of the human craniomandibular complex with special interests in the temporomandibular joint, the muscles of mastication, and the movement of teeth. Her responsibilities include clinical and didactic teaching in the advanced education and dental programs in Orthodontics and Dentofacial Orthopedics and research supervision at the pre-doctoral and graduate levels.



Dr. Iwasaki is a Diplomate of the American Board of Orthodontics and has been involved in the clinical practice of orthodontics for several decades. Before joining OHSU, she was a full-time dental faculty member at the University of Missouri-Kansas City, University of Nebraska Medical Center, and University of Manitoba.

Temporomandibular disorders (TMD) are complex, common conditions that are costly to individuals and society because current therapies are not evidence-based and fail to prevent or cure symptoms predictably. Furthermore, polarizing suppositions about orthodontic therapy causing TMD and being useful to treat TMD continue to persist because foundational data are lacking and the mechanisms of TMD remain unknown. The proposed project will use novel and established technologies to measure multiple candidate mechanisms of TMD and, thus, improve understanding of disease progression. This will provide the needed basis for the development of future evidence-based therapies and benefit practice and education in orthodontics and other areas of dentistry.

The AAOF is important to this project because the funding provided through this Center Award will allow this collaborative research team to address these crucial next steps to acquire needed foundational data for the development of future evidence-based therapies. In addition, these results will be fundamental preliminary data for a future grant application to the National Institutes of Health. This collaborative team is distinctly poised to conduct this project based on specific expertise plus the experience of working well together, as demonstrated by past publications and grants.

AAOF funding has helped advance Dr. Iwasaki's career through three previous awards (one Center, two Biomedical Research), where she was principal investigator. Nine peer-reviewed publications and twenty-one presentations have resulted based directly on research funded by these awards. The current Center Award is critical for Dr. Iwasaki and her research team to acquire novel longitudinal information that distinguish TMD and healthy individuals. Because of the prevalence and the predilection for younger compared to older individuals, orthodontic patients are likely to suffer from TMD. Hence, improved understanding of the causal and risk factors for TMD is vital to improved orthodontic patient care.