



2024 OFDFA

Dr. Ginny Ching Yun Hsu, Oregon Health & Science University

Dr. Hsu is an Assistant Professor from Oregon Health & Science University, Department of Orthodontics. Dr. Hsu was born and raised in Taiwan. She earned her dental degree from Shanghai Jiao Tong University and received Master of science in Oral biology from University of California Los Angeles. After Orthodontics training at New York University, Dr. Hsu pushed the envelope of her research field to stem cell in bone regeneration by going to Johns Hopkins University, School of Medicine, Department of Pathology for three years of postdoctoral training.

Dr. Hsu's research has had a strong emphasis in craniofacial biology, osteoprogenitor cells, and tissue engineering. Her postdoctoral fellowship training in particular, has sparked the interest in the tissue-specific properties of progenitor cells which lie within the perivascular mesenchyme, including microvascular pericytes. Dr. Hsu's research has received diverse research awards from the Northeastern Society of Orthodontists, American Association of Orthodontists Foundation, and the Maryland Stem Cell Research Fund and National Institute of Health. She is currently funded by five-year career development K08 award from the National Institute of Dental and Craniofacial Research.

Dr. Hsu's interests in craniofacial development and regeneration led to the proposed research project: "Validation of synovial capsule tissue response in a novel TMJ OA mouse model". Temporomandibular Disorders (TMDs) impact 33% of the U.S. population with an annual healthcare cost estimated ~\$4 billion. This study aims to validate a novel TMJ Osteoarthritis (OA) mouse model achieved through TMJ synovectomy with burned induced inflammation. Outcome of the proposed study will result in a TMJ OA model that is more efficient and effective than the current available animal model by having a more comprehensive histology features that concordant with TMJ OA developmental trajectories through a relatively straightforward protocol. This model will be a great tool for future study to increase understanding of the progression of TMJ OA and preclinical for TMJ OA treatment. The preliminary data generated from OFDFA will support Dr. Hsu's future NIH R series application.

The career development portion of the OFDFA will support Dr. Hsu's education and training by refining her existing scientific knowledge and supporting the accrual of new skillsets to become an independent clinician-scientist in the field of orthodontics and dentofacial orthopedics and an educator who can inspire the next generation of orthodontists to develop interests in research. The AAOF OFDFA will provide the necessary funding to complete the research project and facilitate Dr. Hsu's career development into an independent investigator.