Orthodontic Faculty Development Fellowship Award

Dr. Po-Jung Chen, *University of Nebraska Medical Center*

Biography

Dr. Chen is currently an Assistant Professor at the University of Nebraska Medical Center. He graduated from the dental school at Kaohsiung Medical University in Taiwan. He completed his Master of Dental Science at National Yang Ming Chiao Tung University, and simultaneously completed clinical orthodontic training at Taipei Veterans General Hospital, Taiwan. After 6 years of practice in orthodontics, he came to the University of Connecticut for a clinical orthodontic fellowship, a postdoctoral fellowship, and orthodontic residency. He became a Diplomate of the American Board of Orthodontics in 2021. He has been proactive in advancing his knowledge in clinical orthodontics along with pursuing his interest in translational research, and an academic career as a clinician-scientist.

Project Synopsis

Temporomandibular Joint Disorders (TMD) are estimated to affect up to 36 million individuals in the United States each year. There is currently an unmet need for a clinically effective approach to treat and regenerate osteochondral tissues of TMJ. Our recent preliminary data suggests that the administration of intermittent (I-) Parathyroid Hormone (PTH) enhances cartilage repair and regeneration, and may cause chondrocyte de-differentiation, generating a novel pool of chondoprogenitors. Additionally, we have associated Fibroblast Growth Factor 2 (FGF2) as a major modulator of this observed de-differentiation. Our central hypothesis is that FGF2 is master regulator of chondrocyte de-differentiation with I-PTH administration. A drug-based strategy to de-differentiate cells and increase the population of proliferating chondrocytes would be extremely helpful during repair and regeneration of the injured mandibular condylar cartilage, and could represent a novel and promising therapeutic approach.

Importance of AAOF Funding

The support and generous funding from the AAOF OFDFA plays a pivotal role in conducting his research. The funding will also allow Dr. Chen to generate preliminary data for future extramural grant proposals. The completion of this work will serve as a key professional steppingstone to further his career aspirations in academia combining his interests in clinical excellence and research.