

**Biomedical Research Award**  
**Dr. Chenshuang Li, University of Pennsylvania**



**Biography**

Dr. Chenshuang Li is an Assistant Professor, and the clinical director in the Department of Orthodontics at the University of Pennsylvania School of Dental Medicine since 2020. She finished dental school training at the Xi'an Jiaotong University in 2011, completed her Ph.D. training in Orthodontics at the School and Hospital of Stomatology at Peking University in collaboration with the UCLA Dental and Craniofacial Research Institute in 2016, finished her orthodontic specialty training at UCLA School of Dentistry in 2019, and obtained DMD from University of Pennsylvania in 2022. Dr. Li's researches primary focus on the functional investigation of molecules involved in craniofacial tissue development and regeneration, as well as 3D imaging analysis. Dr. Li has co-authored more than eighty manuscripts published in top peer-reviewed journals such as The Journal of Clinical Investigation, Biomaterials, The Journal of Bone and Mineral Research, Stem Cells, and The Journal of Dental Research. In addition, Dr. Li is currently the ad hoc reviewer and/or editorial board member of more than 30 peer-reviewed journals, including European Journal of Orthodontics, Bioactive Materials, Journal of Dental Research, Stem Cell Reports. During the past 5 years, Dr. Li was awarded the 2018 AAO First place winner of the Charley Schultz Resident Scholar Award, the 2019 AAO Thomas M. Graber Award of Special Merit, 2021 ORS/ON Foundation Orthoregeneration Award, 2021 IADR Innovation Award for Excellence in Orthodontics Research, 2021 AAOF Orhan C. Tuncay Teaching Fellowship Award, 2021 AAO Full-time Faculty Fellowship Award, 2023 ADEA Leadership Institute Phase V Leadership Development Tuition Scholarship, 2023 James L. Vaden Teaching Fellowship Award, 2024 ADEA / ADEA Council of Students, Residents and Fellows / Colgate-Palmolive Co. Junior Faculty Award, American Dental Education Association, 2024 AAO Fellowship to Institute for Teaching and Learning (ITL), and 2024 AADOCR Anne D. Haffajee Fellowship. Dr. Li has a clear career goal and is eager to serve as an educator and clinician-scientist with an emphasize on evidence based, patient-personalized orthodontic care.

**Project Description**

Orofacial cleft disorders, including cleft lip and/or palate (CL/P), are one of the most frequently occurring congenital disorders worldwide. The health issues of patients with CL/P encompass far more than just their anatomic anomaly. For instance, compared to their healthy peers, children with CL/P present a much higher incidence of infectious diseases. While it has been previously recognized that the oral microbiome of patients with CL/P differs from that of unaffected patients, the effects of this oral microbiome on subsequent dental and craniofacial care of CL/P patients is unclear. To markedly improve the outcome of early CLP revision and to reduce, or even eliminate, the prolonged adverse effects on the patients' health and social integration, seeking novel tissue regenerative and CL/P-specific anti-microbiome approaches are immediately demanded. Successfully establishing a small animal CL/P model system will set the

fundamentals for developing next-generation early CL/P management strategy with the consideration of local microbiotas and thus build up the linkage between novel regenerative medicine advances and CL/P clinical care.

### **The benefit to Orthodontic Education**

This study aims to establish proper small animal models to mimic the clinical condition of CLP patients. The preliminary data generated from this proposal will be the models for our future applications to explore the effects of microbiotas on cleft repair and to develop new oral microbiota management strategies specifically for cleft patients.

### **Importance of AAOF**

The support from the American Association of Orthodontists Foundation (AAOF) for this project is critical for Dr. Li to produce the preliminary data and develop a competitive research program aimed at obtaining additional external grants; as well as to follow a well-structured education, teaching, and clinical practice plan to pursue her academic career in orthodontics.

### **How Foundation Funding Is Expected To Or Has Benefitted Your Career**

Dr. Li was awarded with 2021 and 2023 AAOF Orthodontic Faculty Development Fellowship Award. With the support of AAOF more than fifteen peer-reviewed articles were published as part of Dr. Li's career development. In addition, the preliminary data generated from this AAOF supported projects have led to a NIH R03 grant award. Current AAOF fund will support Dr. Li continue her career development.