

Biomedical Research Award

Dr. Sunil Kapila, *University of California San Francisco*

Dr. Sunil Kapila is Professor and Eugene E. West Endowed Chair of Orthodontics at University of California San Francisco (UCSF), where he also serves as the Chief Executive Officer of UCSF Dental Center. He obtained his dental degree at the University of Nairobi, Kenya, an MS in orthodontics at University of Oklahoma as a Fulbright-Hayes Scholar, and a PhD in Oral Biology from UCSF. Dr. Kapila has received several research and clinical awards including the American Association for Dental Research's Hatton Award, the AAO Milo Hellman Award and Jacob A. Salzman Lecturership, and the B.F. Dewel Honorary Research Award from the AAOF. Dr. Kapila's research focuses on the hormonal basis for TMJ degeneration and periodontal bone biology. Besides authoring numerous manuscripts and chapters, he has published two textbooks "*Current Therapy in Orthodontics*" and "*Cone Beam Computed Tomography in Orthodontics*"



Dr. Kapila and his team plan to explore the contributions of altered osteocyte-mediated subchondral bone remodeling on the progression and severity of temporomandibular joint (TMJ) osteoarthritis (OA). This study will provide an understanding on the pathogenesis of a disorder of substantial clinical importance to orthodontists, and insights into possible therapies targeted at bone and fibrocartilage to alleviate or prevent TMJ OA.

Contemporary scientific inquiry such as that proposed in our studies facilitates the development of critical skills for effective evidence-based approaches to teaching, which I have embedded into my teaching and that continues to evolve. More specifically with regard to the proposed studies, a current resident is undertaking these studies as part of her MS thesis, and will likely engage subsequent orthodontic residents. Through such hands-on mentorship, we expect to develop the curiosity and rigor of scientific inquiry, methodology, interpretation and presentation of findings in manuscripts and at other venues (e.g. research award competitions). Finally, findings of these studies will benefit in educating the broader orthodontic community about discoveries in the field.

Since the proposed studies constitute the initial novel investigations in this field, it is necessary to generate preliminary publishable data for further extramural funding in order to obtain an in depth understanding of TMJ OA pathogenesis. As such, the data generated through AAOF funding will be key to competing for additional funding necessary to achieve the desired long-term goals. Because these studies are expensive, AAOF funding is essential to provide the needed momentum and foundations to our studies.

The funding will enable members of our research team (including orthodontic residents) and me to continue to evolve as scholars and clinicians. As with my past awards from the AAOF, I expect that this BRA funding will help further advance my career as a scholar, teacher, clinician and leader in academic orthodontics and in the AAO.