Title
Bioengineering the Future of Prosthodontics

Abstract:
Engineers solve problem. Prosthodontists are dental engineers who create innovative solutions to address unique dental and craniomaxillofacial challenges. Engineers and prosthodontists share common interests in materials science, chemical/mechanical engineering, electrical engineering, and computer science. However, prosthodontists must also be concerned with bacterial biofilm, host response, wound healing, genetic disorders, drug interactions, and patient perceptions - concepts that are foreign to traditional engineering, but central to the rapidly growing field of bioengineering. In this closing talk, Academy Fellow Ben Wu will introduce some of the exciting Bioengineering innovations that have impacted the world around us, including devices that help the blind see, help the paralyzed walk, and help the mind work. Imagine what we can do with novel diagnostics that complement our traditional mechanical diagnostic tools of periodontal probes and dental explorers. Imagine the innovative solutions we can offer our patients when armed with innovative regenerative therapeutics and implantable devices. A goal of this talk is to stimulate the creative juices and generate ideas among the most innovative prosthodontists. As Linus Pauling said, "the best way to have a good idea is to have lots of them". Nothing is out of bound - per Einstein: "For an idea that does not first seem insane, there is no hope".

Learning Objectives
1. Introduce recent bioengineering advances that impact medicine and dentistry
2. Discuss recent innovations that impact the diagnostic ability of prosthodontists
3. Discuss novel therapeutics that will impact the prosthodontic team

Biography
Academy Fellow Ben Wu earned his DDS from the University of Pacific, and residency training in Advanced Prosthodontics at Harvard under the mentorship of Academy Life Fellow Edwin J. Riley. He earned his Engineering Ph.D. at the Massachusetts Institute of Technology, where he developed 3D Printing of biomedical devices. He has published over 150 papers, over 15 patents, delivered over 100 lectures in national and international conferences, served on numerous advisory committees in academia and industry, and founded several start-up companies. Prof Wu is Chairman of UCLA Division of Advanced Prosthodontics, Chairman of the UCLA Department of Bioengineering, and Director of the Weintraub Center for Reconstructive Biotechnology. He holds faculty appointment in the Departments of Materials Science and Engineering, Department of Orthopedic Surgery, California NanoSystems Institute, and Computational and System Biology. In the School of Dentistry, he is leading the efforts to position UCLA Advanced Prosthodontics as the driver of clinical excellence and innovation around the world. Prof. Wu provides prosthodontics patient care in the UCLA Faculty Dental Group Practice.