



Academy of Prosthodontics 2026 Annual Scientific Session
The Boca Raton Hotel, Boca Raton, FL | May 27-30, 2026

Program Speaker – Prof. Dr. Sillas Duarte, DDS, MS, PhD

Title

Innovations & Advancements in Esthetic Dentistry: Exploring the Synergy Between Adhesive and Digital Technologies

Abstract

The rapid evolution of digital technologies, combined with advances in adhesive dentistry, has transformed how clinicians diagnose, plan, and deliver esthetic and functional care. Modern digital workflows enable minimally invasive, highly esthetic, and durable restorative solutions tailored to patient needs and material-specific considerations. Contemporary ultra-conservative techniques allow integration of multiple modalities, expanding treatment possibilities to scenarios once considered unattainable. At the ultrastructural level, intricate interactions between enamel, dentin, and advanced biomaterials enhance adhesion, longevity, and tooth preservation creating long-lasting clinical solutions and predictable outcomes.

This presentation provides a systematic, evidence-based framework for selecting esthetic restorative options, drawing from original research on adhesive interfaces, material performance, and digital design and manufacturing. Emphasis will be placed on emerging materials, CAD/CAM, adhesive systems, and 3D-printing technologies that elevate precision and predictability. Although these advancements improve outcomes, failures and complications remain possible, especially in complex rehabilitations. Key risk factors and decision-making strategies will be reviewed to support long-term clinical success.

Learning Objectives

- Understand challenges related establishing a stable adhesive interface to ceramic, composite, and dental structures.
- Choose adhesive strategies for different clinical situations.
- Understand the advantages and limitation of adhesive procedures for ceramic vs 3D printed materials and contemporary resin composite CAD/CAM solutions.

Biography

Dr. Sillas Duarte is Associate Dean of Comprehensive Care and Rex Ingraham Chair in Restorative Dentistry, Herman Ostrow School of Dentistry, University of Southern California. Dr. Duarte is Director of the Advanced Program in Operative & Adhesive Dentistry and the Master of Science in Biomaterials and Digital Dentistry at USC. He is the former editor-in-chief of Quintessence of Dental Technology (QDT). Also, Dr. Duarte is Section Editor in Adhesive Dentistry of the Journal of Esthetic and Restorative Dentistry and the International Journal of Esthetic Dentistry, and has served on the editorial boards of several journals. Dr. Duarte has lectured and performed hands-on courses nationally and internationally on esthetic dentistry, biomaterials, minimally invasive dentistry, and adhesion. He has been involved in teaching cutting-edge clinical techniques and technologies related to esthetic and adhesive dentistry. His research and clinical work focus on bonding to dental

structures, composites, ceramics, and CAD/CAM technologies.

**Speaker has disclosed affiliation with GC, Roland DGA, Henry Schein*