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The Scope of Translational and Stem Cell Biology in Studying Peripheral Pain Mechanisms

Niki Ruparel is an Associate Professor and Director of the Advanced Education Program in Endodontics at UT Health San Antonio. She is a Diplomate of the American Board of Endodontists and maintains both, a clinical and research program at UT Health. Her research program has been funded by foundation and federal grants and is currently the Principal Investigator for her study on endogenous peripheral pain regulatory systems in orofacial pain patients and a co-investigator for a study on sexually dimorphic pain mechanisms mediated by serotonin in the dental pulp. Her other areas of research include 1) development of novel non-opioid drugs using stem cells for treatment of infection-induced pain using a clinically translational orofacial model of apical periodontitis-induced pain; 2) study the role and function of stem cells in tooth regeneration, specially the role of bacteria/biofilms on stem cell fate and the immuno- regulatory role of stem cells in wound healing and regeneration; and 3) clinical trials in patients to evaluate the role of endodontic procedures on healing and bacterial reduction using cone beam computed tomography and RNA sequencing, respectively.