

1999 Research Award

Principal Investigator: Professor Robert P. Kusy

Other Investigators: Ms. Glenys A. Thorstenson

Title of the Project: The Effect of Novel Bracket Designs on the Resistance to Sliding in the Wet and Dry States

Institution: University of North Carolina at Chapel Hill

Brief Summary: Several novel bracket designs, which are currently on the market, are asserted to have lower resistances to sliding than their conventional counterparts. When clearances exist between the archwire and the bracket, the additions of stainless steel slot inserts to aesthetic brackets improve the frictional properties of plastic and ceramic brackets, but not composite brackets. Bumps in the slots of ceramic brackets decrease the resistance to sliding values as compared to conventional designs, but the frictional properties of stainless steel brackets are not affected by bumps in the slot or beveled slot walls. The beveled slot walls do increase the angles to which clearances exist but at the expense of some loss of control of root positions. When clearances no longer exist between the archwire and the bracket, the design features of the novel stainless steel brackets increase the rates of binding over that of conventional stainless steel brackets.