Patellofemoral pain is the most common lower extremity condition seen in orthopaedic practice. Despite its high prevalence however, treatment approaches remain highly variable and often lack scientific backing. One reason for the lack of consistency in managing patellofemoral joint problems is related to the fact that the pathomechanics of this disorder remain poorly understood. Over the past 15 years, our group has taken a multidisciplinary approach to better understand the root cause(s) of patellofemoral dysfunction. The purpose of this seminar is to highlight recent research in the areas of in-vitro testing, biomechanical evaluation, dynamic imaging, and computational modeling that has lead to a better understanding of this multifaceted clinical problem.