A chemical analysis of mineral contents of enamel demonstrated that levels of calcium and magnesium in the surface of the teeth associate with genetic variation in enamelin, a gene when mutated causes autosomal forms of amelogenesis imperfecta. These analyses provide a framework for studies that aim to identify individuals who may be more susceptible to enamel demineralization and were performed in collaboration with the Chemistry Department and their students, Alina Halusic (top photo) currently in the dental hygiene class of 2015, and Victoria Sepich, a pre-dental undergraduate student. The article, Calcium and magnesium levels in primary tooth enamel and genetic variation in enamel formation genes. Halusic AM, Sepich VR, Shirley DC, Granjeiro JM, Costa MC, Küchler EC, Vieira AR. Pediatr Dent. 2014;36(5):384-8., can be found here: http://www.ncbi.nlm.nih.gov/pubmed/25303504

Amelogenesis imperfecta due to mutation in enamelin (image from Mardh et al. Hum Mol Genet 2002;11:1069-74)