Principal Investigator	Nan Hatch, DMD PhD
Co-Investigator	
Secondary Investigators	
Award Type	Orthodontic Faculty Development Fellowship
Project Title	Orthodontic Faculty Development Fellowship Award To Nan Hatch
Project Year	2005
Institution	University of Washington
Summary/Abstract (250 words maximum)	The focus of my PhD work was on the molecular basis of diseases that involve abnormal development of the craniofacial skeleton. One project investigated a potentially important link between fibroblast growth factor signaling and the expression of factors that regulate pyrophosphate production by osteoblasts. This project was accepted for publication in the Journal of Connective Tissue Research in 2005. A second PhD project examined the effects of craniosynostosis syndrome associated mutations on fibroblast growth factor receptor (FGFR) function. Mutations in the FGFR gene family have been associated with the craniosynostosis syndromes, whose primary phenotype involves aberrant development of the craniofacial skeleton. In an effort to better understand the biochemical consequences of these mutations on receptor function, I investigated the effect of a Crouzon syndrome mutation on receptor trafficking, degradation and signaling. This project was accepted for publication in the Journal of Biological Chemistry in 2006, which is a highly prestigious scientific journal.
Were the original specific aims of the proposal realized?	Goals for the funding period of this award were met. I successfully completed my PhD in Molecular and Cell Biology at the University of Washington in September of 2005, and relocated to become a full time faculty member in the Department of Orthodontics and Pediatric Dentistry at the University of Michigan. The research aspect of this proposal resulted in two strong publications and one presentation. Results of research completed during this funding period also led to significant scientific progress in subsequent years.
Were the results published? If not,	**Hatch** N, Nociti C, Swanson E, Bothwell M and Somerman M (2005*). FGF2 Alters Expression of the Pyrophosphate/Phosphate*

are there plans to publish? If not, why not?	*Regulating Proteins, PC-1, ANK and TNAP, in the Murine Osteoblastic Cell Line, MC3T3E1(C4)*. Connect Tissue Res 46(4-5): 184-92. **Hatch** N, Hudson M, Seto M, Cunningham M and Bothwell M (2006). *Intracellular retention, degradation and signaling of glycosylation deficient FGFR2 and craniosynostosis syndrome associated FGFR2^{C278F}*. J Biol Chem 281(37): 27292-305.
Have the results of the proposal been presented? If so, when and where? If not, are there plans to do so? If not, why not?	**Hatch**, N (2006). *Mutant Fibroblast Growth Factor Receptor Signaling and the Molecular Etiology of Craniosynostosis.* Oral presentation. Biennial Conference on Orthodontic Advances in Science & Technology (COAST): Developmental Defects of the Craniofacial Skeleton, Asilimar, CA.