AAO Foundation Award Final Report

Principal Investigator	Nanci Lara Oliveira De Felippe
Co-Investigator	N/A
Secondary Investigators	N/A
Award Type	Orthodontic Faculty Development Fellowship Award - **Robert E. Gaylord Teaching Fellowship Award**
Project Title	Orthodontics and Craniofacial Anomalies with Emphasis on Rapid Maxillary Expansion (RME)
Project Year	05-01-07 to 05-01-10 (finalized on 03-02-08)
Institution	University of Illinois at Chicago
Summary/Abstract (250 word maximum)	**Introduction:** The availability of new, reliable, objective, and 3-dimensional techniques to assess the effects of rapid maxillary expansion on the morphology of the maxillary dental arch, nasal cavity dimensions, and nasal airway resistance led to the development of this research. M**ethods:** Thirty-eight subjects participated in this study (mean age, 13 years). Data were collected before expansion, when the expander was stabilized, when the expander was removed, and 9 to 12 months after the expander was removed. Subjective assessment of improvement in nasal respiration was obtained when the expander was stabilized. Threedimensional imaging and acoustic rhinometry were used to assess the virtual cast and the nasal cavity, respectively. **Results and Conclusions:** The statistically significant short-term effects of RME were (1) mean increases in palatal area, volume, and intermolar distance; (2) a mean reduction of nasal airway resistance; and (3) mean increases in total nasal volume and nasal valve area. Our long-term findings were the following: (1) mean

	palatal area and intermolar distance were reduced, while palatal volume was stable, and (2) nasal airway resistance was stable, whereas mean nasal cavity volume and minimal cross-sectional area increased. Additionally, 61.3% of our subjects reported subjective improvement in nasal respiration. Weak correlations were found between all variables analyzed.
Were the original, specific aims of the proposal realized?	Yes.
Were the results published? If not, are there plans to publish? If not, why not?	Yes. Oliveira De Felippe, N.; Da Silveira, A.; Kusnoto, B.; Smith, B.; Viana, G.; Evans, C.: "Relationship between rapid maxillary expansion and the nasal cavity's size and airway resistance. Short and long-term effects," Am J Orthod Dentofacial Orthop 134(3):370-82, 2008.
Have the results of this proposal been presented? If so, when and where? If not, are there plans to do so? If not, why not?	Yes. Oliveira, N.: "Rapid Maxillary Expansion and Nasal Respiration," Oral Presentation, 105th Annual Session of the AAO, Las Vegas, 2006. Oliveira, N.: "Effects of rapid maxillary expansion on the nasal cavity," Oral Presentation, Continuing Education Program from the Associação Brasileira de Odontologia, Brasilia, BRAZIL, 2005. Oliveira, N.; Da Silveira, A.; Kusnoto, B.; Smith, B.; Evans, C.: "Objective assessment of the nasal cavity and the maxillary arch after Rapid Palatal Expansion," Poster Presentation, 106th Annual Session of the AAO, San Francisco, 2005. Oliveira, N.; Da Silveira, A.; Kusnoto, B.; Smith, B.; Evans, C.: "Objective assessment of the nasal cavity and the maxillary arch after Rapid Palatal Expansion," Poster Presentation,

	Clinic and Research Day, UIC, 2005. Oliveira, N., Da Silveira, A.; Viana, G.: "Effects of Rapid Maxillary Expansion on the nasal cavity's cross-sectional area, volume and airway resistance," Oral Presentation, GLAO&MSO Combined Annual Session, Chicago, 2004.