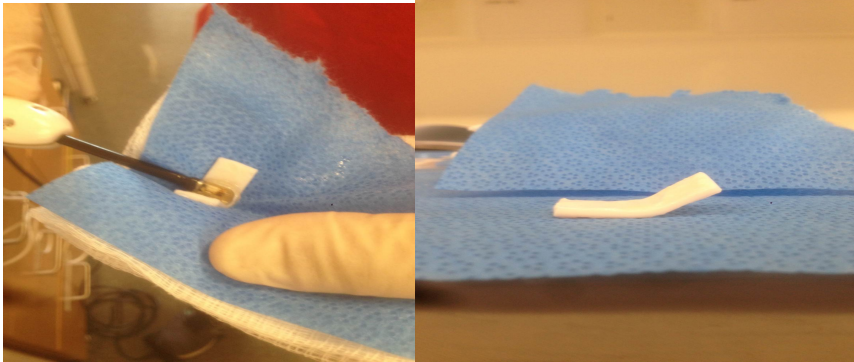


Methods and Devices for Reshaping Craniofacial Cartilage

More than 350,000 surgeries are performed each year to remove or reshape nasal septum cartilage, making septoplasty one of the most common medical procedures performed in the US. While effective, septoplasty is invasive, requires the use of a general anesthetic, and involves significant tissue morbidity. Non-surgical alternatives to septoplasty would greatly expand the patient base and minimize the occurrence of side effect associated with reconstruction of nasal cartilage.

A collaborative team including members of the Bonassar Lab (BME/MAE) and Aerin Medical, Inc. are exploring methods using sub-ablative radio frequency (RF) energy to reshape nasal septum cartilage. Aerin Medical has an RF device clinically approved for treatment chronic mucus overproduction and is in clinical trials to assess the efficacy of reshaping nasal valve cartilage. Because the nasal septum is stiffer than nasal valve, adjunct treatments such as enzymatic exposure in addition to RF treatment are being investigated for their ability to reshape the nasal septum. Students who join the team will be tasked with: optimization of concentration and time of enzymatic exposure and design of an appropriate device to deliver these enzymes to patients. Depending on the students' interest and background, additional opportunities may exist to deploy and assess this device during in vivo studies.

This project is well suited for 2 students who have a background in tissue handling, dissection, mechanical testing and mechanical design, including CAD and fabrication. Familiarity with mechanical testing, Labview, and MatLab software is also desirable. Interested students should forward a copy of a resume and unofficial transcript to:



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