



SENIOR DESIGN PROJECT SYNOPSIS – SPRING 2013

EXPANDABLE SPINAL CAGE

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The purpose of this project is to greatly reduce the amount of sizes and parts needed to effectively perform a corpectomy, the procedure of replacing vertebrae in the spine. The common procedure has many flaws and as future engineers we feel that we can alleviate many of the issues in traditional spinal fusion procedures. By reducing the amount of cages from a pack of 20 pieces with many different sizes, the objective will be to design, test, and future market a “one size fits all” cage while still able to support the vertebral column like any implant currently on the market. Realistically, since the spine sizes greatly vary, creating one cage that could fit throughout any area in the spine would an extremely difficult task would take years of development and testing. However, for the 3 regions of the vertebral column, the thoracic and lumbar region will be targeted with a single cage which is a design that has yet to be developed on the market. The cervical region is drastically smaller in size due to the fact that it is located throughout neck and head and will not be considered for design in this project. Therefore our cage will solve the issues within the majority of regions within the spinal column.