Fecal Incontinence (FI) is an incurable condition in which patients are unable to control their bowel movements. FI affects 10% of all US residents. There is a need to eliminate the necessity for a surgeon and anesthesiologist to make treatment affordable. Lucrative area, with the main treatment option being bought for $14.5 billion in 2014. Dr. Lucas Rodriguez and our sponsor CerSci Therapeutics • Dr. Rennaker and the Texas Biomedical Device Center • Dr. Foland and the UTDesign staff • Rodrigues and Hayenga Labs

Utilizes sclerotherapy needles, a novel use for this procedure • Sclerotherapy needles are used in endoscopic procedures and are a long tube with a retractable needle at the end • Simple casing for housing sclerotherapy casings • We pursued this in addition to our initial design because we had the time and it offered numerous benefits both in design and with potential company partnerships

Outcome: 0.5cm lip, 45° chamfer angle, rounded head shape • Employed ballistics gel model of anus • Tested insertion and pullout forces with an MTS • Optimized lip length, chamfer angle, and head shape • Nylon 12, 2mm thickness ideal

Finite Element Analysis for material failure and deformation • Identified weak points of device • Finite Element Analysis

Acknowledgments

Future

SBIR submission for funding • 510k clearance for FDA • Licensing/partnerships with interested parties

Contact Team Lead: Tyler Markle tylersmarkle@gmail.com