**Force Sensing Stapedotomy Instrument**

- Design and laboratory verification of an adapted manual instrument to measure tool-to-anatomy forces for robot-assisted middle-ear surgery (stapedotomy).

- **What Students Will Do:**
  - Research current clinical approaches; select instrument; determine the operational parameters of instrument
  - Design of force-sensing instrument adaptor for Galen robot
  - Design and conduct validation tests to determine usefulness

- **Deliverables:**
  - Minimum:
    - Proof-of-concept prototype, adaptation to Galen, measurable force (0-1N)
    - Documentation of requirements and design
  - Expected:
    - Verification test report, documentation of phantom design
    - Measurement accuracy evaluation
  - Maximum:
    - Demonstrate drilling can be stopped by exceeding force with Galen Robot

- **Size group:** Two
- **Skills:** Mechanical/Electrical Design, CAD, 3D Printing
- **Mentors:** Dr. Taylor; Contacts: David Levi (Galen Robotics)