Safe Blade
Sketch Model Review
Team Blue A
400,000 annual hospital visits... [1]

- Due to tool-related accidents
  - Slip of the hand
    - No fail-safe for tools with blades
- Common blade environments
  - Machine Shops
  - Homes
  - Schools
  - Work
- Blade and Tool Market: $10.3 billion [2]
Similar Product: SawStop

- Table saw that senses user’s fingers

- Sensing Mechanism
  - Detects difference in capacitance caused by human contact [3]

- Mechanical stop
  - CO2 cartridge forces aluminum brake into saw blade [3]
Safe Blade Sketch Model

- Market: General tool users
- Sketch model goals
  - Sense the presence of a finger
  - Test spring retraction mechanism
- Findings
  - Detects all conductive materials
  - Capacitive sensing works for preliminary sensing
Next Steps

- Sensing
  - Additional sensors needed
    - Distinguish fingers from other conductive materials
- Mechanical
  - Decrease latency
    - Electromagnet actuation
References

