**Problem**

- Many watch companies outsource their mechanical movements, which are then put into a variety of watch cases and sold at an expensive price.

- Being unaware of the true capabilities that machines have at Texas State University and whether they can fabricate a watch case for a similar movement companies use, specifically the Unitas 6498-1 movement.

**Unitas 6498-1 Movement**

**Process**

**Conceptualization**
- Customer Needs:
  - Water Resistant
  - Readable
  - Easy to reproduce
  - Able to Interchange parts
- Initial Ideas:
  - Non-skeletonized watch
  - Skeletonized watch with chapter ring
  - Watch with dial

**Technical Specifications**
- Initial Design:
  - Independent party can easily replicate based on drawings
  - Surface roughness
  - Water resistant at 5 ft
  - Price of materials
  - Accepts standard watch bands

**Final Design**
- Modifications:
  - Larger case tube in diameter
  - Larger case opening for case tube diameter
  - Deeper O-ring gap
  - Longer case lugs for spring bar
  - Deeper countersink for screws

**Future Proposals**
- Threaded case back
- Add bezel or chapter ring for time reference
- Organized tool crib for quicker tool location
- Realignment of 5-axis CNC machine axes

**M3 – Mechanical Watch Case Design and Fabrication**

Joshua Jennings | Alec Chamberlain | Kevin Diaz
Sponsored by Dr. Rich Compeau