Assignment: CAD Test Tube Modification Video Submission
Platform: OnShape
Due Date: May 23, 2025
Length: 5 minute target (10 minutes max - see details below)

Objective:
This assignment will help build your fluency with OnShape's CAD tools while also creating a resource for your peers. The goal is to clearly demonstrate *how* you use specific OnShape features to modify a test tube model. These videos will be used to help orient future students to 3D design and 3D printing projects at UATX and at SERA.

Instructions:

1. Open the base test tube file in OnShape.
2. Record your screen and **narrate your process** as you make one or more modifications to the file.
3. Your video must be **at least 5 minutes** and **no more than 10 minutes**.
    - If you'd like to make a longer video, contact the professor to get approval before proceeding.
4. Your narration should emphasize:
    - The **specific OnShape tools** you're using (e.g., extrude, revolve, shell, fillet, sketch tools)
    - Any **tips or techniques** you've found helpful (e.g., using construction lines, mirroring, referencing geometry)
    - How your changes prepare the design for **3D printing** (e.g., ensuring flat bottoms, maintaining wall thickness)

Possible Modifications:

- Add an **internal ridge** within the tube
- Replace the **rounded bottom** with **square corners**
- Add **circular bulges** to the tube walls
- Modify the **cap design**
- Or propose and implement your own modification, especially if it aligns with a specific purpose for your envisioned final test tube design

Grading Rubric:

- Clear and accurate explanation of OnShape tools used
- Logical and well-organized narrative flow
- Viewers can follow all technical steps
- Video meets time requirements
- Audio narration is clear and instructional

Reminder: This video is not about design choices — it's about showing your **process and technical workflow** so others can learn from it.

Additional Details

Videos will be available online for UATX students on the UATX Astronautics Substack and provided to SERA as part of their core resources for the competition.

Video sessions will be coordinated with the UATX Comms team for video and audio capture.