Visualization of complex concepts, processes, and rare or fragile artifacts can be difficult in a learning environment. The OSLO Repository seeks to provide an open platform for sharing and modifying contextualized 3D learning objects to facilitate learning.

**Object Types**

- **3D Models and Designs** - offer visual and tactile references for complex ideas
- **Curriculum** - provides context for models

**Repository** platform (Hydra-Sufia) offers “normal” services (ingest, metadata, identifiers, etc.) along with additional planned functionality including:
- **Design and Curriculum Revise-Resubmit** Functions
- **Moderator** and possible peer-review
- **Under discussion:** community review “journal” for open designs

**Handling History**

- **User:** Special Collections & Archives Research Center (SCARC)
- **Use Case:** Some objects in SCARC have high curriculum potential, but are not available for use due to their fragile nature
- **Products:** 3D Scan of cuneiform tablet; renderable and fabricatable models; SCARC and teaching faculty generated curriculum

**Epistimological Slider**

- **User:** Pacific Slope Archaeology Lab
- **Use Case:** Research-level content can be recontextualized at multiple epistemological scales. Curricula at graduate, undergraduate, and primary school levels can be applied to the same object(s)
- **Products:** 3D models of artifacts; multi-scale curricula; research-scale datasets

**Math Made Real**

- **User:** Mathematics
- **Use Case:** Difficult to visualize mathematical concepts
- **Products:** renderable and fabricatable models; curricula for each model; versioned curriculum based on audience and available classroom time

1) Multi-variable function - illustrates “Two Path Test for Nonexistence of a Limit”; 2) Hyperbolic paraboloid helps develop intuition of 3D surfaces; 3) A tetrahedron; 4) Engineering puzzle to explore problem solving; 5) Spherical coordinate volume differential

**Contact:** Steve Van Tuyl - steve.vantuyl@oregonstate.edu - @badgerbouse

Acknowledgements: This work is supported by an Oregon State University Information Systems Learning Innovation Grant. Thanks to pilot project collaborators Loren Davis, Alex Nyers, Dan Rockwell, Anne Badhe, and John Selker