Interactive Segmentation in Slicer 3.6.2

- GrowCut image segmentation is in Slicer’s Editor Effect
  - Incorporates paint tool interaction
  - Optionally interact using “draw”, “paint” Editor effect
- Supports simultaneous viewing of user inputs and segmentation
- Supports editing segmentation with additional gestures
- Simple user interface (no exposed parameters)
Active Learning For Guiding Gesture Placements

- **Gesture suggestions to user** combines GrowCut segmentation with active learning using SVM
  - Suggestions are selected using a two-step approach
  - **Step I** treats GrowCut segmentation and SVM classification as diverse ensembles to select query candidates
  - **Step II** employs SVM margin-based gesture selection on the query candidates

- Number of interactions required for novel image segmentation with learning is 50% less than without learning
- Algorithm guided interactions minimizes segmentation variability

1. User input gestures
2. GrowCut Segmentation
3. Gesture Suggestion Accepted & Labeled by User
4. GrowCut Segmentation
5. Gesture Suggestion Accepted & Labeled by User
6. GrowCut Segmentation