# Supplementary Material for

# CUTS: A Deep Learning and Topological Framework for Multigranular Unsupervised Medical Image Segmentation

## A Hyperparameter tuning

Three key hyperparameters were tuned empirically (Fig. S1). First, we found that the optimal patch size for pixel-centered patches is $5 \times 5$. Then, we determined to sample 8 patches in each image for contrastive learning and reconstruction. Lastly, we set the contrastive loss coefficient at 0.0001. Note that $l_{contrast}$ is still nontrivial after weighing, because the numerical value of $l_{contrast}$ is more than 3 orders of magnitude higher than $l_{recon}$ at convergence.

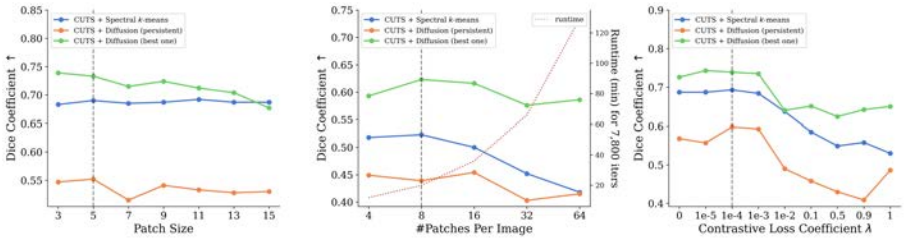


**Fig. S1.** Effects of hyperparameters.