Speed School of Engineering

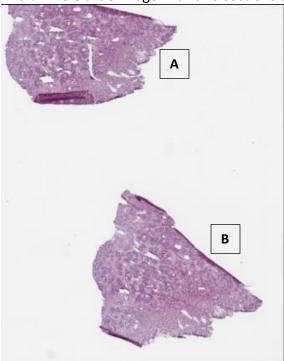
**Bioengineering Department** 

BE 544 Artificial Intelligence and Digital Pathology

Fall 2022

## **Assignment 2 – Weakly Supervised Nuclei Segmentation**

- 1. Please visit <a href="https://portal.gdc.cancer.gov/">https://portal.gdc.cancer.gov/</a>
- 2. Search for TCGA-AA-3562-01A-01-BS1.2bc37a71-647d-4e7e-9e3a-12191942a051.svs, you will find a whole slide image with two sections of tissue



- 3. Read slide in QuPath
- 4. Use pixel classifier to segment nuclei in any ROI you choose in <u>section A</u>. Try to optimize the spatial smoothing filters
- 5. In Python, import the produced annotations using paquo.
- 6. Prepare dataset for segmentation like the segmentation data under Week 11 (image/binary map paired image) to be **train** data
- 7. Train a U-NET model
- 8. Repeat steps 4, 5, 6 in section B to prepare test set
- 9. Run inference on the test set

<u>Deliverables:</u> Samples from your results as triplet image (image, gt binary, prediction binary) <u>Due date:</u> Monday November 21<sup>th</sup> Midnight