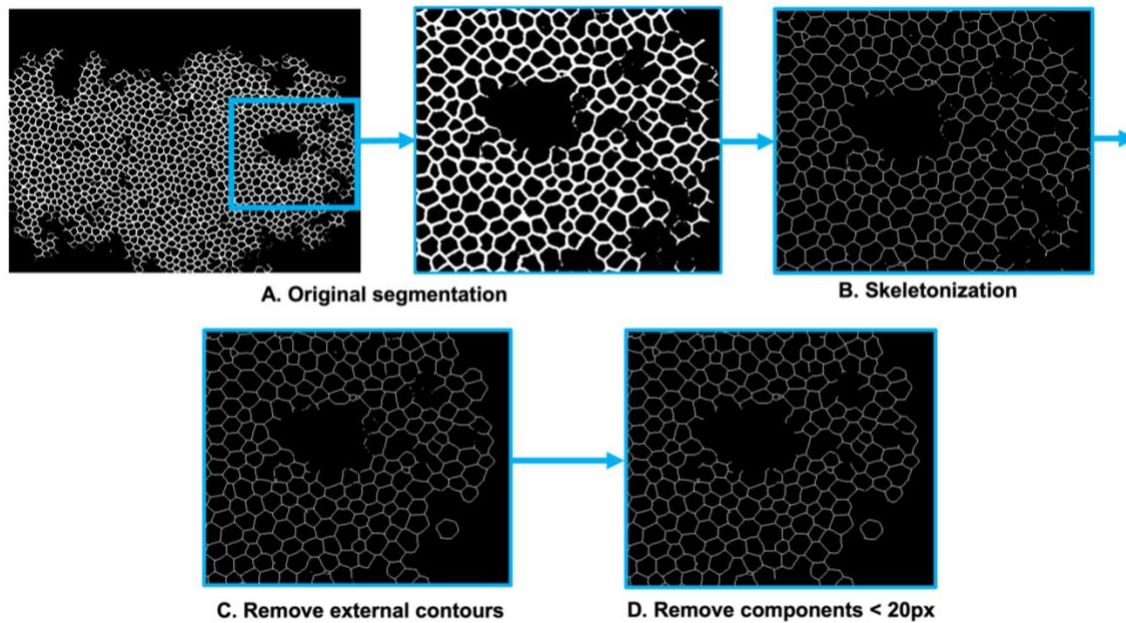
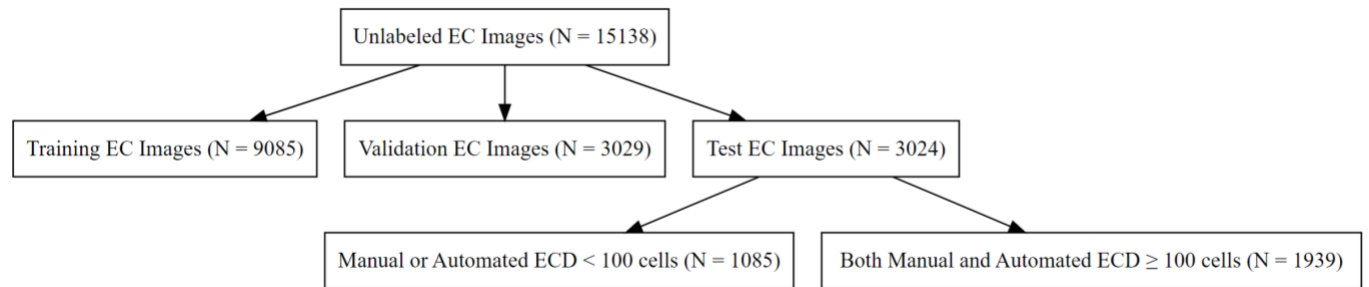


Supplementary Figure S1



Post-processing pipeline applied to cell border segmentations immediately outputted from deep learning model. (A) Original segmentation as generated by the deep learning model with selected inlet for visualization. (B) Skeletonization result of the segmentation to create single-pixel width cell borders. (C) Removal of external contours to exclude stray and disconnected edges near outside of mask. (D) Removal of cell border segmentation components smaller than 20 pixels.

Supplementary Figure S2



Splitting of unlabeled donor EC images (first row) into training, validation, and held-out test set (second row) for self-supervised deep learning cell border segmentation training. The third row demonstrates how the held-out test set EC images were split post-segmentation based on how many cells (greater than or less than 100) were automatically identified from the segmentation.

Supplementary Table S1. Association of donor age, diabetes, and death to preservation time with ECD differences between manual and automated methods.

		Univariable		Multivariable	
		Coefficient (95% CI ¹)	p-value	Coefficient (95% CI ¹)	p-value
Whole Image					
Variable	N			N	
Donor Age, per decade	1939	-24 (-30, -19)	<.001	1083	-25 (-33, -17) <.001
Diabetes	1083	-32 (-54, -9)	0.006	1083	-22 (-44, 0) 0.05
Death to Preservation, per hour	1939	0 (-1, 2)	0.72	1083	1 (-1, 3) 0.34
Cropped Image					
Variable	N			N	
Donor Age, per decade	1939	-20 (-25, -15)	<.001	1083	-20 (-27, -14) <.001
Diabetes	1083	-18 (-37, 0)	0.05	1083	-11 (-29, 8) 0.25
Death to Preservation, per hour	1939	0 (-1, 1)	0.90	1083	1 (-1, 2) 0.48

Abbreviations: ECD = endothelial cell density; CI = confidence interval

1. Cluster bootstrap percentile confidence interval based on 100000 bootstrap samples.

Supplementary Table S2. Association of the average of manual and automated ECD with the difference between manual and automated ECD.

		Coefficient (95% CI¹)	p-value
<i>Whole Image</i>			
<i>Variable</i>	N		
Avg of Manual and Auto ECD, per 500 cells/mm ²	1939	134 (122, 147)	<.001
<i>Cropped Image</i>			
<i>Variable</i>	N		
Avg of Manual and Auto ECD, per 500 cells/mm ²	1939	120 (110, 131)	<.001

Abbreviations: ECD = endothelial cell density; CI = confidence interval; Avg = average
 1. Cluster bootstrap percentile confidence interval based on 100000 bootstrap samples.