

Supplemental Material
Visinity: Visual Spatial Neighborhood Analysis for Multiplexed Tissue Imaging Data
 Expert Survey (Questionnaire Results after Hands-On Usage of Tool)

	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
Visual Encodings					
Displaying color-coded outlines around cells indicating their cell type shows which cells may be interacting.				1	3
Visualizing spatial neighborhood patterns with the parallel coordinates plot helps show which cell types cellular neighborhoods are made of.				3	1
Visualizing a 2D embedding of spatial neighborhoods as a scatterplot helps uncover cells with similar spatial neighborhoods and spatial neighborhood patterns.				1	3
The matrix visualization helps to identify colocalization of pairs of cell types and can highlight interesting interaction patterns.					3
Discovering and Searching For Neighborhood Patterns					
Searching for similar neighborhoods based on their composition (e.g. 50% Cell Type A, 25% Cell Type B, 25% Cell Type C) helps test hypotheses about the spatial neighborhood patterns within a specimen or cohort.					4
It is easy to sketch a neighborhood in the composition view (Parallel Coordinates Plot) to express a spatial neighborhood hypothesis.				1	3
Searching for similar neighborhoods based on a selected region of interest can uncover spatial neighborhood patterns within a specimen or cohort.					4
It is easy to use the lasso tool to select a region of interest in the tissue image.					4
Using Visinity's clustering functionality helps quickly identify neighborhood patterns in a specimen or cohort.				2	1
The interface for clustering is intuitive.				1	3
Saving, Labeling, and Comparing Patterns					
It is helpful to keep track of found patterns by saving and labeling them.					4
The interface for saving and labeling patterns is intuitive.					4
Small visual summaries indicating where in a specimen a spatial neighborhood pattern exists help compare this pattern to others.				1	3
It is useful to compare patterns by looking at which cell types they are composed of.				2	2
Overall Impressions					
The application interface design is intuitive and accessible.				2	2



Is there any other feedback you can share?

The tool is easy to use and provides a number of features that enable both testing spatial biology swiftly switching between user exploration and cross-sample testing. The visualization interface that allows moving from single sample to groups of samples is intuitive and extremely useful - it is not included in any data visualization tool I have been exposed to and it make Visinity uniquely suited to robust and reliable biological discovery.