

**Title:** Hot Spot Analysis and Visualization

**Critical Resources:** an internet connected computer, ArcMap (available in 70-2670), Hot Spot Analysis and Visualization datasets.

**Purpose:**

The purpose of this lab will be for you gain experience and knowledge with Hot Spot Analysis and Visualization.

**Learning Objectives – After completing the lab, you will know:**

- how to form a hypothesis about a spatial problem
- testing the hypothesis using a spatial statistic
- visualizing results of your hot spot analysis

**Deliverables:**

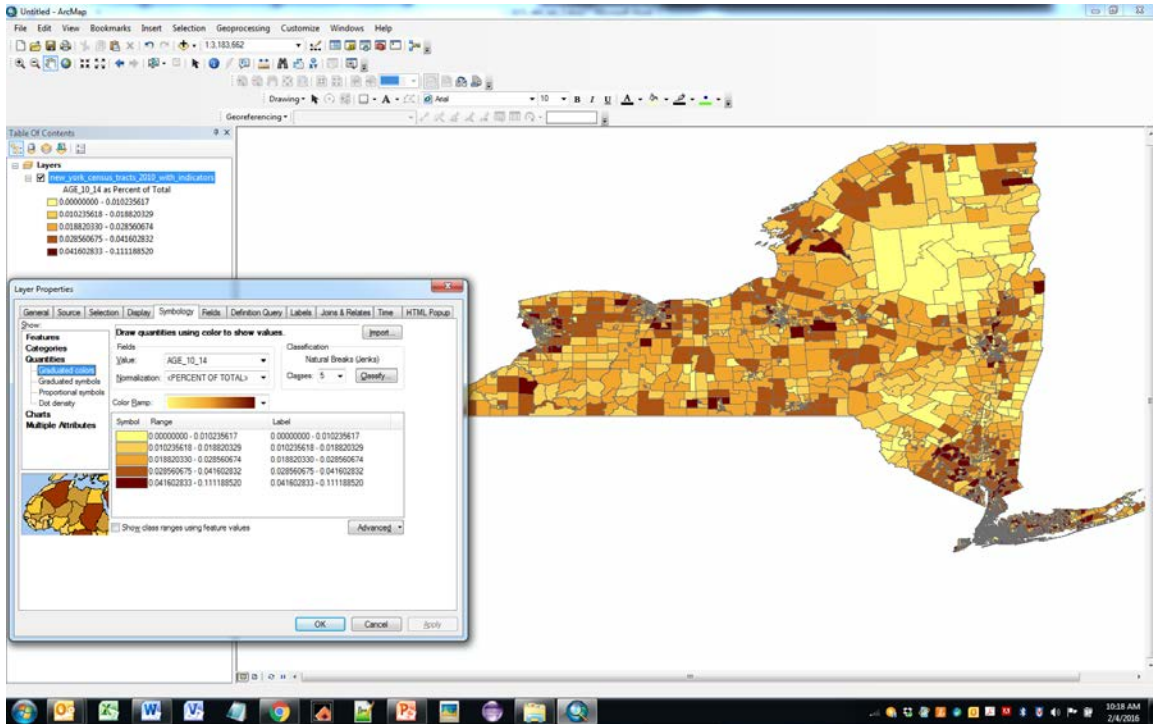
A write-up of your response to the instruction questions.

**Instructions:**

1. Open the Hot Spot Analysis and Visualization datasets in ArcMap, these are census tracts for New York State
2. Examine the attributes of the dataset to find variables that might be of interest to you. For example, vacant houses or owner occupied houses.

	MHH_CHILD	FHH_CHILD	FAMILIES	AVE_FAM_SZ	HSE_UNITS	VACANT	OWNER_OCC	RENTER_OCC	SI
▶	32	219	527	3.17	910	126	303	481	
	105	737	1388	3.17	3103	589	426	2088	
	69	378	1294	3.01	3041	460	893	1688	
	8	24	377	2.42	1074	57	628	389	
	18	85	962	2.69	2306	110	1164	1032	
	0	1	6	3	13	1	12	0	
	45	175	606	2.94	1652	93	375	1184	
	16	56	278	2.87	943	71	284	588	
	29	224	559	3.42	1708	299	174	1235	
	71	384	893	3.38	1896	483	399	1014	
	38	175	464	3.33	1302	287	151	864	
	9	38	127	2.86	812	107	34	671	
	13	27	379	2.44	2693	289	405	1999	
	21	72	480	2.94	2454	226	279	1949	
	24	108	633	2.94	1882	114	613	1155	

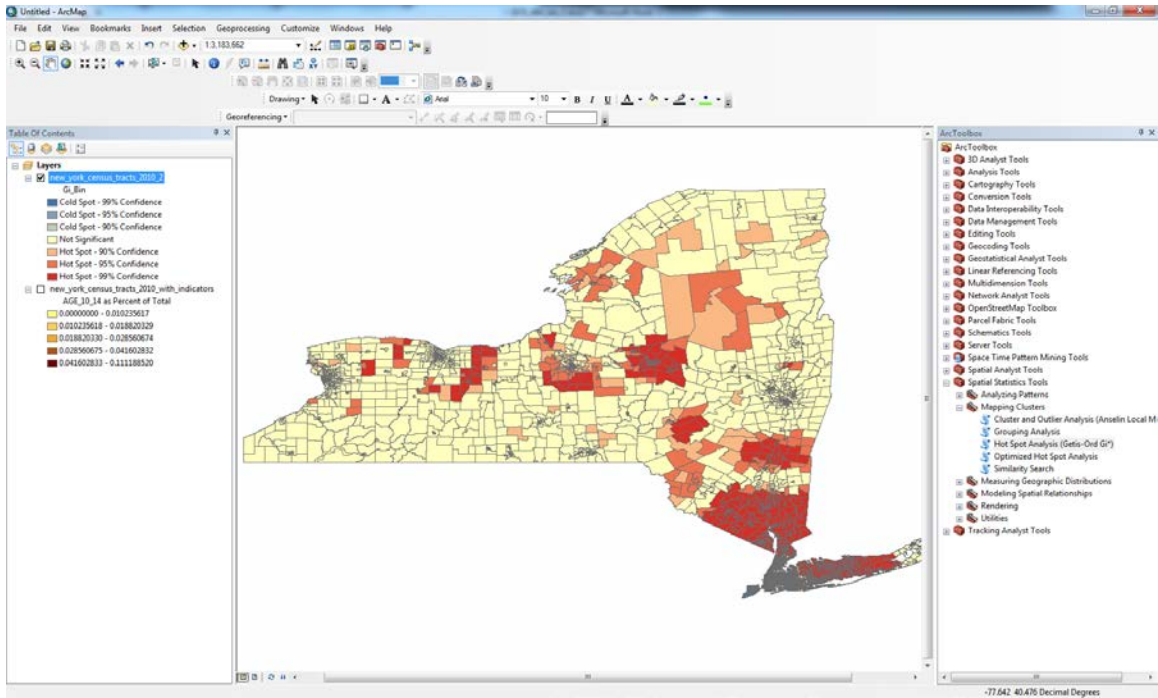
3. Create a normalized choropleth map of the variable you are interested in to start formulating your hypothesis. For example, the image below shows age groups 10 to 14 in a 5 class natural breaks normalized as percent of total



Add a screen shot of your map to your final deliverable and your initial thoughts on patterns you are seeing. Describe how those patterns lead you to a hypothesis.

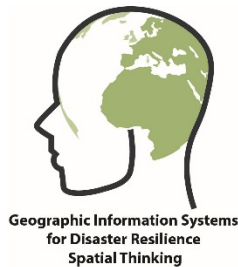
4. Write down a hypothesis you wish to investigate. Run the Getis-Ord  $G_i^*$  statistic on the dataset (ArcToolbox > Spatial Statistics Tools > Mapping Clusters > Hot Spot Analysis (Getis-Ord  $G_i^*$ ))

Place a screen of your Getis-Ord  $G_i^*$  output in you final deliverable (see example below).



Provide a short (25-50 word) discussion if you think you can accept/reject your hypothesis and any other observations you made.

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