## Excel Step-by-Step Description on Data Manipulation

- 1. Downloaded 8 databases from Opportunity Atlas: Baltimore and New York teenage birth rates for all income, high income, middle income, and low income.
- 2. Filtered all sheets to include just Baltimore, MD and New York, NY results by utilizing the text to columns tool.
- 3. Added an additional column and labeled it "income" to indicate which income each data row was in reference to.
- 4. Combined all 4 Baltimore sheets into one Excel sheet (and all 4 New York sheets into another Excel sheet) to have combined data across the three income levels (including all income as a baseline comparison of an average regardless of income stratification).
- 5. Inputted a pivot table for the Baltimore and New York data and filtered out neighborhoods that were missing data for one or all of the income levels.
- 6. Ordered the neighborhoods to reorder based on ascending teenage birth rates before inserting a line graph "Fraction of Women Who Gave Birth in their Teenage Years by Income Level" for Baltimore and New York in two separate graphs.
- 7. Copied over the combined data for New York and Baltimore by income levels, and found the average for all income, high income, middle income, and low income for both cities.
- 8. Created a pivot table and inputted a bar graph, "Fraction of Women Who Gave Birth in their Teenage Years by Income Level" to compare New York and Baltimore.
- 9. Downloaded 4 more databases Baltimore and New York teenage birth rates for race, Black and White, for all income.
- 10. Filtered all sheets to include just Baltimore, MD and New York, NY results by utilizing the text to columns tool.
- 11. Added an additional column and labeled it "Race" to indicate which race, Black or White, each data row was in reference to.
- 12. Combined all filtered data into one sheet and inputted a pivot table for the Baltimore and New York data. Filtered out neighborhoods that were missing data for one or both of the race-related birth rate data.
- 13. Created a bar graph based on the total averages for Black and White teenage birth rates across all incomes, "Fraction of Women Who Gave Birth in their Teenage Years by Race across all Income Levels" to compare New York and Baltimore.