# Food Deserts in Davidson County

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## Who am I?

- PhD in Biological Sciences from Vanderbilt
  - Retinal Regeneration
- Data Scientist at Amira Learning
  - Machine Learning models for AI reading tutor for kids
- Program Manager for Analytics and Data Science at NSS
  - Data Analytics Instructor







## If you want to follow along:

Github: <a href="https://github.com/raom1/nashville-food-deserts">https://github.com/raom1/nashville-food-deserts</a>

- Food\_Deserts\_in\_Davidson\_County.pdf
- Nashville\_food\_deserts\_datanerds.ipynb

Kaggle kernel: <a href="https://www.kaggle.com/raomahesh/nashville-food-deserts">https://www.kaggle.com/raomahesh/nashville-food-deserts</a>

## Food deserts can be found surprisingly close to home



## What is a food desert?

The USDA has defined characteristics for food deserts. Different analyses consider different characteristics, but most take into account at least some of the following indicators of access:

- Access to healthy food, like distance to and number of stores
- Individual accessibility, such as family income or vehicle availability
- Neighborhood indicators, such as average income of the neighborhood and public transportation

#### Bottom line: Low income and low access

## How to identify a food desert?

Food deserts are defined at the level of the census tract

Th USDA defines a low-income census tract in multiple ways. The way used for this analysis is:

The tract's poverty rate is 20 percent or greater

Three measures of food access based on distance to a supermarket are provided by the USDA. The one we can use for the analysis is:

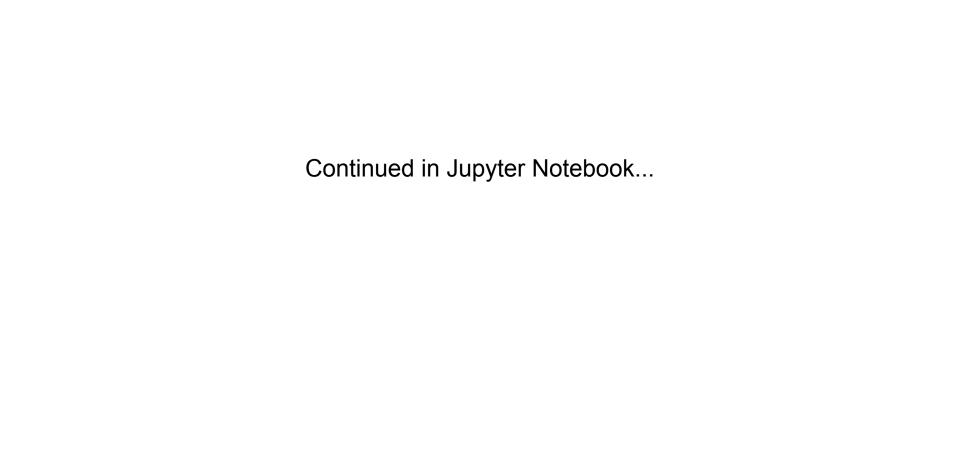
Low-income census tracts where a significant number (at least 500 people) or share (at least 33 percent) of the population is greater than 1.0 mile from the nearest supermarket, supercenter, or large grocery store for an urban area or greater than 10 miles for a rural area. This measure shows that an estimated 19 million people, or 6.2 percent of the U.S. population, live in low-income and low access tracts and are more than 1 mile or 10 miles from a supermarket

## How to identify a food desert?

#### Here are the things we need for the analysis:

- Census tract boundaries
- 2. Income information
- If a census tract is urban or rural
- 4. Location of farmers markets and supermarkets

We can then combine these data to find the proportion of low-income census tracts that are too far away from sources of fresh food, resulting in a possible food desert.



## **Future Directions**

- Refine the criteria for food deserts by incorporating neighborhood indicators like public transportation
- Cast a wider net to ensure all sources of fresh food are captured
- Investigate if certain types of stores are associated with the presence of food deserts ("Dollar" Stores)

# Thanks for coming!

Questions?