Data sources:

# **FoodAPS National Household Food Acquisition and Purchase Survey URL:**<https://www.ers.usda.gov/data-products/foodaps-national-household-food-acquisition-and-purchase-survey/?fbclid=IwAR3CaKb5RFt34o5aHR6gAJGtQWrcjDWEGjnGYAzLsUQ6VtXPPj0QnqrYtXg>

* **Design a policy goal:**

1. Create post on piazza.com describing project goals and plans to achieve these goals (see project goals).
2. **Goals: What kinds of policies might be effective at improving nutritional outcomes for particular populations?**
   1. Education about health in elementary schools
   2. Access to fresh fruits & vegetables (i.e. farmers market)
   3. City Ordinance restricting 1 fast food restaurant every 9mi^2.
   4. Grocery store - Recording data on the produce & quantity bought by consumers

**[#A1] Replicability & Documentation**

Create a public repository on github.com to contain all your code and data, also with documentation which is good enough to allow other students outside your group to replicate your findings.

**[#A2] Document Goals**

Create a post on piazza.com for your group describing your ideas for how you’ll tackle each of the goals described below. What tasks need to be accomplished, and who will accomplish them? Update this post as the project proceeds.

**[#A3] Choice of a dataset**

Need to be able to:

* Observe item expenditures, to estimate demand system;
* Observe (or construct) quantities of different items, in  
  units that can be converted into standard units;
* Be able to map quantities of food into bundles of nutrients.

**[#A4] Estimate Demand System**

Estimate a system of demands for different kinds of food, obtaining estimates of parameters than can then be used to describe demands as function of prices, budgets, and household characteristics.

**[#A5] Construct Nutrient System**

If you can describe quantities demanded as function of prices, budgets, and household characteristics, and map quantities into nutrients, then you can also describe a system of *nutrients* as a function of the same variables.

**[#A6] Nutritional challenges & Policy Goal**

Compare predicted nutrition to recommended nutrition. Establish some criteria for deciding what the biggest nutritional challenges are for this population. For example, what share of households is Calorie deficient? Protein deficient? Vitamin A deficient? Note that different criteria are possible, and there is no one “right” criterion.

Characterize the nutritional challenges you observe in your data, and construct a policy goal to address some of these challenges (e.g., reduce proportion of households that are protein deficient by half).

**[#B1] Policy Options**

Design two or more policies which achieve your policy goal. For example, targeted income transfers to increase households’ food budgets, or subsidies or taxes to change the relative price of foods. Use simulation to show that the proposed policies achieve the policy goal.

**[#C1] Policy Cost**

Your proposed policy will have some cost. A tax or subsidy will involve a dead-weight loss. Without knowing the supply-side we won’t be able to measure this, but what if supply is perfectly

elastic? What can you say about the costs of the different policy options?

**[#C2] Value of Technical Innovation**

We’re not necessarily stuck with a particular mapping from food to nutrients; perhaps foods can be engineered or designed to deliver different nutritional outcomes. Identify particular foods that

might be engineered in particular ways to address your policy goal (compare the example of “golden rice”, which engineered rice to increase the amount of vitamin A). What would the value of these innovations be? How might this information be used to guide investments in research and development of improved sorts of food?

**[#A7] Presentation**

Each team will be responsible for giving a 15 minute presentation of the work they’ve accomplished during the sprint. Be creative! Think of awesome new ways to help others visualize what you’ve learned.

**[#A8] Replication & Discussion**

Your project and git repository will be shared with some randomly chosen other team, and your team will be randomly chosen to have materials from some other team share with it. Attempt to replicate the other team’s main results, using the data and code shared with you. Document your attempt, identifying any problems you encountered, your thoughts on overcoming these problems, and describing strengths and weaknesses of the other team’s analysis.

1. **Begin reading:**

* **Technical change:** [Borlaug (2000)](http://www.plantphysiol.org/content/124/2/487?ijkey=c12c5c79e5b11c10820b21877391b978804dc1c5&keytype2=tf_ipsecsha)
* **Changes in budget:** [Deaton-Dreze (2009)](https://www.jstor.org/stable/40278509)
* **Changes in relative prices:** [Falbe et al (2016)](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5024386/)