No Food for Thought: Food insecurity, inflammation, and cognitive functioning

Kate Giffin, Biology major, Neuroscience minor
Faculty Advisor: Dr. Keely Muscatell, Department of Psychology and Neuroscience
Background + Research Questions

- **Food insecurity is a risk factor** for chronic disease and mental illness

Research in children and adolescents shows that **food insecurity is harmful for cognitive development**
  - But there is little research in older adults

- Chronic inflammation is caused by low socioeconomic status and food insecurity
  - Inflammation is harmful for cognitive functioning

- **Is food insecurity associated with lower cognitive functioning in older adults?**
- **Does food security status moderate the association between inflammation and cognitive functioning in this population?**
  - I.e. is inflammation the biological pathway through which food insecurity impacts cognition?

This research matters because a) food insecurity is a major social problem that needs to be addressed and b) it is important to identify risk factors for neurodegenerative diseases so they can be prevented
Results + Significance

- **Food security was significantly associated with lower cognitive functioning scores across all measures**
  - Food insecurity may increase the risk of cognitive impairment and neurodegenerative diseases like Alzheimer’s
  - Future longitudinal research is needed to identify the direction of this relationship

- **Greater levels of inflammation were associated with food insecurity and lower cognitive functioning**
  - However food security status did not alter the relationship between inflammation biomarkers and cognitive functioning
    - This finding conflicts with previous research
      - It is possible that the FI–inflammation link is diminished in the elderly population
    - Future research is needed to confirm the lack of a relationship and to propose a new neurobiological pathway linking FI and cognition