Are you a JHU student interested in research and project ideas for your capstone, final essay, practicum, or thesis? The following project ideas would make valuable contributions to the field of food systems and public health and tie in to programs currently underway at the Johns Hopkins Center for a Livable Future (CLF). This list is by no means comprehensive and the ideas on this list are illustrative; different versions of these projects could also be viable. If you are a JHU student and would like to pursue any of these, please contact your advisor to narrow down the ideas and then contact Meg Burke to discuss next steps and the possibility of mentorship from CLF faculty and staff.

Please note: these projects are not Research Assistant positions and funding for these projects is generally not available. Information about CLF Research Assistant positions and other opportunities to get involved with CLF can be found here.

Healthy and Sustainable Eating and Living

1. Assess the impact of the Meatless Monday campaign on consumer attitudes and food choices. Potential settings for evaluation include schools, college campuses, hospitals, restaurants, soup kitchens, or workplaces.
2. Examine: what do people actually understand about sustainable diets? CLF would mentor this project for a capstone and would work with the student on the survey instrument design.
3. Analyze data from interviews with consumers and farmers on a military base about what they understand about sustainable diets.
4. CLF has worked in several Baltimore neighborhoods to gather information on communities’ experiences of their local food environment, including financial and logistical barriers to accessing healthy foods, food behaviors, and prevalence of diet-related diseases. The information gathered is intended to inform local community partners in their efforts to address identified areas of concern; to inform policymakers in the Baltimore City government; and to build the evidence-base of assets and areas of concern in Baltimore’s food environment. This year we will be partnering with an organization in Park Heights to conduct an assessment.
5. Messages for Meat Reduction Project: Based on understanding factors that motivate different groups of people to shift attitudes about meat, test different messages with different consumer groups. Message testing could be done at Meatless Monday food service sites or among other consumer groups. The results will be used to develop initiatives and communication materials targeted at shifting consumers’ animal and plant-based protein consumption.
6. Review the literature on “inflammatory foods” and their potential contributions to the rise in food and environmental allergies.
7. Perform a literature review of articles specific to motivating environmentally sustainable food consumption and especially, to maintaining motivation. Or apply a relevant behavioral science theory to these questions.
8. The “what you should eat” message in the context of climate change and environmental sustainability is complex. Identify one or more areas of complexity (e.g., meat or seafood consumption) and, in light of behavior change/communication theory or data gathered from interviews, focus groups, or surveys, discuss how this complexity should be communicated to consumers.

9. Examine trust of the food system among different demographic groups.

10. Analyze a dataset of more than 800 food stores to develop a neighborhood-level assessment for healthy food availability in Baltimore City. CLF collected store-level data for every known food store in Baltimore City by surveying food stores using the Healthy Food Availability Index, a tool developed by CLF to note the availability of a market basket of healthy food items and provide each store with a score. In partnership with the Baltimore Food Policy Initiative, CLF uses its current methods of in-store healthy food availability assessment and average store scores to identify food desert areas in Baltimore City. However, little is known about healthy food availability at the neighborhood level. This analysis will assess a resident’s food environment by looking across all stores in a geographic area and understanding the complete market basket of items available in that area.

11. Perform literature review on assessing rural food environments specifically related to healthy food access.

12. Bring an ethics lens to the issue of reducing meat consumption, in light of varying population preferences.

13. Examine awareness of virtual water content, land use, pesticide use, GHG footprint of different foods and how knowledge of that might influence food choices.

Agriculture and Food Systems

14. Examine occupational health and safety issues in sustainable agricultural production and/or in other parts of the food chain; compare worker health and safety in organic vs. fair trade vs. conventional production.

15. Describe “land grabs” in which some governments, multi-national companies, or even wealthy individuals purchase land in developing countries for their own agricultural production, and the potential impacts on food security in affected areas. Review available information on mutual fund investment in this process.


17. A survey of vegetable, fruit, and livestock processing facilities in the region. The certification level of the facility may limit where products may be sold, which is especially important in a multi-state region like the Mid-Atlantic. A comprehensive listing of businesses, capacity, pricing, and certification powers would be of great value to producers. Gathering that listing would also provide evidence of where the processing system needed improvement or expansion. A partner organization would mentor this project, and could provide additional resources including an advisory group of farmers to advise on the survey.

18. A comparative analysis of the type and effectiveness of various farmland preservation programs in the Mid-Atlantic. There are numerous tools for land preservation---tax abatement, zoning, purchase and transfer of development rights, providing incentives for
easement donations. Such programs can vary even from county to county, between states, and between the states and the federal government. A comparative assessment of the employment and results of the various approaches would help those planning policy for the health of the watershed and its potential for food production choose or adapt their approach. A partner organization would mentor this project and could provide additional resources and contacts to guide the project.

19. Perform literature review on using GIS to assess food distribution and local food chains
20. Review differences in climate change mitigation potential (e.g., reducing urban heat island effect, reducing storm water runoff) between urban farms/gardens and urban forests
21. Perform a literature review and produce a white paper or report discussing the differences between animals raised on pasture vs. in concentrated animal feeding operations across a variety of ecological (climate, water, land, nitrogen and phosphorus, biodiversity), public health (e.g. antibiotic use, nutrient levels such as omega-3 fatty acids), and animal welfare indicators
22. Participate in a project on urban food system resilience, by helping to develop indicators that can be used by planners and accompanying communication materials; or refining indicators for use in modeling research. Participate in media research about food animal production.
23. Work with the CLF Food System Lab @ Cylburn to create a food safety plan for its farm operations.
24. Work with the CLF Food System Lab @ Cylburn to analyze the nutrient spectrum of the water in its aquaponics system and/or the nutrient concentrations in the plant tissues of the vegetables grown there.

**Food System Resilience**

25. Evaluate the capacity of food processing facilities in the Baltimore metro region to contribute to the city’s food supply.
26. Review literature on determinants of social capital in communities and interventions that support community food security through improved social capital.
27. Interview Baltimore residents about transportation methods used to access food; identify possible alternative transportation methods that could be used during crisis events.

**Seafood and Aquaculture**

28. Unfed aquaculture, including production of oysters, mussels, clams, and seaweed, is highly sustainable. What should public health professionals do to shift seafood consumption toward these types of seafood?
29. Assess certification and rating systems for wild and farmed seafood regarding improvements in the following areas: food safety, environmental impact, resource use, occupational health and safety, traceability, and food access/food security.
30. Examine the ethical considerations associated with producing and selling genetically engineered salmon.
31. Seafood is the number one food type that moves from low- and middle-income countries (LMICs) to high-income countries. What are the implications of this situation in LMICs regarding food security, environmental health, occupational health and safety, and economic development?
32. There is not enough seafood produced globally to meet recommended dietary guidelines. Should seafood be promoted to the general public or priority groups (e.g., pregnant women)?

33. Pond aquaculture of fish and crustaceans has a high freshwater footprint. Explore the implications of pond aquaculture in different regions of the world and research effective strategies to reduce freshwater use.

34. Analyze the impact of local, state, and/or federal aquaculture regulations. Is aquaculture properly regulated to reduce potential negative environmental public health and food safety consequences? If not, what policy changes could be made to increase protections?

35. In collaboration with the CLF Food System Lab @ Cylburn (fish/hydroponic vegetable farm), investigate ways to reduce the amount of electricity and propane used as part of the operation.

36. The menhaden fishery in the Chesapeake Bay is one of the largest fisheries in the US by volume, and all of it is turned into fish feed, pet food and fertilizer. Tracking fish from net to feed or fertilizer, what is their role in our food system, what could their role be if menhaden were promoted as a human food, and what are the potential ecological and economic risks from depleting menhaden fisheries?

37. What are governments, international bodies, and organizations doing to combat human trafficking and forced labor in the fishing and seafood processing sectors? What’s working and what needs to be done?

38. Farm to school programs in coastal communities are now including seafood. Interview project stakeholders, fishers, and students and find out what are challenges and opportunities in “fish to school” programs.

39. Traceability is becoming a major issue for fisheries and aquaculture. Oceana found that 20% of seafood globally is mislabeled, which causes economic, health, and social problems. What are best practices for traceability in food supply chains generally, and what can fisheries and aquaculture learn from developments/innovations in other fields?

40. Participate in research on seafood waste.

Wasted Food

41. Evaluate impacts of one of the many new food waste interventions, such as stores selling near-date foods at discount, or food recovery/gleaning projects. Or: design an evaluation template that can be used across projects to yield consistent/comparable results.

42. Perform research into food product grading processes and standards, and related opportunities to reduce food losses.

43. We advise people to buy more produce, and entice them with beautiful farmers market products – many of which decay before being eaten. Our nutritional and “foodie” messaging may be contributing to food waste. Work with CLF to study this dilemma and ways to address it.

44. Work on a part of an upcoming CLF study to test a consumer food waste prevention intervention using waste diaries.

45. Perform program evaluation of JHU composting activities and/or test different educational messages to promote composting.

46. Do municipal trash collection systems track quantities picked up by location or incentivize decreased trash production? Explore this topic and the possibility of mapping the data.
47. Food pantries and food banks are increasingly working to improve the healthfulness of foods they accept. Research the impact on donors of unhealthy processed foods – how have their strategies for dealing with excess changed (or not?)

48. How are consumers using frozen foods as a strategy to reduce food spoilage and waste?

49. More broadly, CLF is interested in mentoring other student projects related to wasted food, so if you have an idea, feel free to reach out.

**Food System Policy**

50. Food security is often overlooked as a component of national security. Student research in this area can focus on case studies (such as the development of the 2008 food crisis, the role of the wheat crisis in Syria and Russia in the Syrian conflict, and more) as examples of the complex relationship between food, agriculture, and national security. Additional research projects include literature reviews and analyses of various elements of the food system and their influence on and relationship with national security.

51. Perform a landscape assessment of government and NGO “asks”, certification programs, guidelines, and recommendations for consumer behavior and institutional procurement related to food in the areas of environment and climate impact, animal welfare issues, and workers’ rights, as well as other issues. Identify the key players in this arena, areas of agreement and discord, and key audiences and targets.

52. Conduct a case study on industrial poultry production on the Eastern Shore, with a focus on identifying barriers to community engagement with decision-makers and recommendations for improving the protection and promotion of public health in agriculture.

53. Conduct a comparison of the US agricultural workforce and guest worker visa programs to those in other countries, and identify similarities, differences, best practices, and areas for potential improvement in the US system.

54. Analyze the role of activist financial investing, and the ability of these investment actions to influence agricultural policy. Include consideration of actions to limit the ability of activist investors to pressure public companies on issues ranging from climate change to animal welfare.

55. Study on the effects of the bottle tax: Baltimore City works to attract new food retail to the city through various means. The bottle tax ordinance, however, has proved to be a barrier. Enacted in 2012, the ordinance established a $0.05 tax on all beverage containers less than two liters, excluding dairy, dairy substitute and beverages containing at least 10% juice. Retailers – particularly independent grocers – claim to be unable to absorb the cost. Grocery stores have opposed the container tax since its introduction in City Council claiming that individual beverage containers are a huge driver of sales for grocery stores. Independent grocers also complain that the container tax adds to a broader competitive disadvantage of doing business in the city, where real and personal property taxes are higher than the rest of the state, and where high theft and vandalism also increases their overhead. This study would survey customers about their awareness of the tax, and examine sales data from the stores to determine the effect on sales. Additionally, there is concern that the inclusion of bottled water in this tax negatively influences aspects of consumer behavior. City governments typically do not evaluate the effect of ordinances, policies and regulations on businesses, therefore, the bottle tax provides a novel opportunity to study the unintended effects. This study would be conducted in partnership
with the Baltimore Development Corp. CLF will participate in meetings, make introductions and mentor the student.

56. Review the evidence on the effectiveness and public health impact of food systems policy, in the areas of reducing food waste and recovery, expanding access to land and other resources for urban farming and community gardening, restricting or taxing unhealthy food, incentivizing new food retailers in food deserts, public procurement of regional, sustainable, fairly, or humanely produced food, increasing access to land for sustainable agriculture, etc.

57. Explore government funds supporting IFAP expansion in LMIC countries.

58. Research local and regional farmer awareness of federal and state disaster support programs for crop recovery.

59. Develop a review paper examining one of the following linkages and identify research needs in order to quantify impacts: Farm Bill conservation programs and public health, competition in the livestock industry and public health, or support for “beginning and socially disadvantaged farmers” and public health.

60. Perform an updated analysis of the usage of USDA EQIP conservation funds to support industrial food animal production.

61. Examine the levels of support for food and agriculture industry businesses in “socially responsible” mutual funds. To what extent are these supporting relatively unsustainable or unhealthy production? Describe relevant shareholder initiatives. Make recommendations for socially responsible fund investment.

62. Assess effectiveness of Food Policy Council (FPC) Listserv and Resource Library: The FPC listserv has been in operation for several years and currently has over 1200 subscribers. It serves as an information exchange resource for those sharing and seeking information on a variety of local and state food policy topics as well as food policy council practices. The assessment would determine how the listserv could be enhanced, better serve more subscribers, improve the range and quality of its content, and improve its management. CLF’s will provide the data and oversee the project.

63. Develop Food Policy Issue Briefs: A series of food policy issue briefs could be developed on numerous topics that are currently gaining ascendance in to the FPC community. Topics could include public purchasing of regionally, sustainably, fairly and humanely produced food, expanding access to land and other resources for urban farming and community gardening, local wage and benefits laws for food workers, restrictions and taxes on unhealthy food, comprehensive planning that includes local/regional food systems, and policies designed to improve access to healthy and affordable food. The briefs would be up to five pages in length and outline the issue (pros and cons), identify common approaches to the issue, describe model legislation, ordinances, and regulations, and review a couple of outcomes. Additional readings, links, and other resources could be attached. Where possible, take the resources that are on the resource library and decide categorically which topics warrant an issue brief. CLF’s role is to provide the data and oversee the project.

64. Examine the membership of food policy councils to understand how councils address conflicting viewpoints or interests of members representing seemingly contrasting viewpoints, like restaurant owners and labor union representatives, or large-scale, commodity agriculture and small-scale diversified producers. What are the tensions that exist across members of food policy councils? How do food policy councils encourage representation from diverse stakeholders? What systems or structures have food policy
councils established to help resolve issues amongst members with contrasting viewpoints? What strategies have food policy councils used to reach consensus?

65. Regional Food Policy Networks: More states and regions are creating networks of councils in order to foster collaboration. We have not assessed this formally and are interested in understanding what is happening at these various levels. This will involve document review, possible interviews and listserv inquiries. Might include reviewing the status of FPCs in other countries.

66. Media analysis of how health is discussed in relation to the Farm Bill.

**Food Systems Education/Outreach**

67. Develop educational programs and materials targeting youth and general audiences related to the [Food System Lab @ Cylburn](#).

68. Develop and pilot outcome evaluations for youth visitors to the [Food System Lab @ Cylburn](#) for each extended program and tailored to different age groups.

69. Literature review on the concept of “food literacy” in adults and youth and exploration of changes in food literacy based on participation in urban agriculture or other activities that engaged with local/regional/sustainable food systems.

70. Map national and/or state educational standards to youth educational programming at the Food System Lab @ Cylburn.

71. Develop a manual and lesson guides to accompany classroom-based aquaponics or hydroponics projects for food system education, including instructions for operating the systems and lesson plans grounded in CLF’s [FoodSpan curriculum](#).