JOHNS HOPKINS
CENTER *for* A LIVABLE FUTURE

FOOD SYSTEMS RESEARCH AND PROJECT IDEAS FOR STUDENTS

COMPILED BY THE JOHNS HOPKINS CENTER FOR A LIVABLE FUTURE FOR AY26-27

This document summarizes a select set of research and practice project ideas for students at the Center for a Livable Future (CLF). The aim of this resource is to facilitate engagement of JHU students in CLF-relevant projects that may align with BSPH academic program requirements such as MPH capstones, MHS essays, ScM theses, and doctoral dissertations. The project examples provided are illustrative and meant to inform and /or inspire exploration of new ideas. Through communication with CLF staff, students can identify, develop, refine and implement projects. Students interested in exploring involvement in such projects should contact Phil McNab (pmcnab1@jhu.edu).

1. Animal Agriculture and Public Health

Animal agriculture is a core focus of CLF's research and practice activities. The Center conducts and supports research and provides technical assistance in partnership with a range of organizations to generate, communicate, and steward scientific evidence to support a transition from industrial livestock production to more sustainable and just food systems. This includes identifying and advancing alternatives to the industrial model of animal agriculture. As such, this area of work is wide-ranging, and students may contribute in many ways.

Examples of Past Projects with Students

- **The livestock veterinarian shortage: Implications for food safety and security**
- The case for regenerative agriculture: Economic evidence and underlying barriers to implementation for U.S. producers

Student Project Ideas

- Focus on a community that has seen an actual or potential influx of CAFOs, and use secondary data sources (e.g., newspaper articles) to analyze how the community has responded and been affected.
- Analyze the network of organizations and partnerships, from local to national, that work to address public health issues associated with industrial animal agriculture.

- Conduct an analysis of NGO reports and/or media coverage of farmed animal welfare legislation in terms of how the upstream or downstream public impacts are discussed (or not).
- Conduct a landscape analysis of the current body of evidence related to the mental health of slaughterhouse workers.
- Map the expansion of CAFOs (concentrated animal feeding operations) in a particular region over time. This may include an analysis of the change in size of the facilities and estimate the change in waste generated by them. Discuss the policy environment that facilitated the growth and/or the impact on surrounding communities. (Note: pieces of this project are already underway).
- Why have we not made more progress in reducing the quantity or scale of harms associated with industrial animal production, given the ever-greater clarity about environmental, public health, animal welfare and social impacts? Which barriers are strongest and most amenable to change?

2. Food Policy Solutions

The Center relies on scientific evidence and public opinion polling to inform food systems-related policies at the local, state, and federal level. Our work in this area seeks to advance food production methods that support the health of people and the planet, address the negative impacts of industrial animal agriculture, uplift communities and workers, promote equity and transparency in food systems, and align food production with the consumption of healthy and sustainable diets. As a research partner of the **Food Policy Networks**, a national network for food policy councils (FPCs), and similar organizations, the Center seeks to support local and state policies that promote alternatives to the industrial model of food and animal agriculture. We do this by collecting and analyzing data on food policy councils across the United States.

Examples of Past Projects with Students

- Agricultural exceptionalism: How the exclusion of H-2A workers from federal labor protections endangers seasonal farmworker health
- **Swine production line speeds and worker wellbeing: A Health in All Policies approach to the 2019 New Swine Inspection System (NSIS)**
- The public health implications of a federal policy push to build methane digesters across the United States
- Advocating for food systems change: Lessons learned from food policy councils
- **Veggie Rx in the Farm Bill**

Student Project Ideas

- Explore the membership of food policy councils that work on food and animal agriculture issues. What organizations do they represent? Why do they participate in an FPC? What value does their organization gain from participating in an FPC? What impact does participation from the organization have on the FPC or members of the FPC?
- Examine the local and state level policies to support alternative production practices, such as regenerative agriculture, and identify other policy opportunities to support alternative production practices.
- Analyze impacts of food procurement policies prioritizing purchasing based on values including climate mitigation, fair markets for producers, equity and inclusion, worker well-being, resource conservation, and animal welfare.
    - What do we know about how the above-mentioned policies affect consumer behavior when eating on their own?
- Analyze the observed or prospective public health impacts of a specific federal policy change related to food, agriculture, and/or the climate.
- Explore ways that groups have mobilized to address gaps created by recent policy changes, or to counter such policies.
- Contribute to drafting a manuscript based on data about relationships between food insecurity and occupational injury and illness.
- Gather data to explore how journalism can influence food and agriculture policy and, in turn, public health. This could include conducting interviews with journalists and other key informants or developing case studies that highlight examples where media coverage contributed to policy awareness or change.
- Choose a food systems policy that was initiated in an earlier farm bill and trace its trajectory in subsequent farm bills, as well as its impact (e.g., Healthy Urban Food Enterprise Development, which began in the 2008 farm bill). How effective was the strategy of "getting a foot in the door" by starting with a small initiative? Why?

3. Aquatic Food Production and Consumption

The Center's work on aquatic food systems and public health aims to provide the evidence and insight needed to inform policies, programs, and interventions that advance sustainable aquatic food practices. Projects underway include conducting research on U.S. seafood consumption patterns and behaviors; worker health and safety in U.S. aquaculture, fisheries, and processing; animal ethics in aquaculture; technical assistance and science advising on aquaculture; public policy monitoring of proposed state and federal legislation/ rulemaking; aquatic food waste; delivering input on the Dietary Guidelines for Americans specific to aquatic food recommendations;

defining a path forward for sustainable, just, resilient, and equitable aquatic food systems; and translating evidence into public comments, fact sheets, videos, and educational materials.

Examples of Past Projects with Students

- **Renewable energy in fisheries and aquaculture: Case studies from the United States**
- An evaluation of opportunities for seaweed to improve human and environmental health

Student Project Ideas

- Analyze third party certifications for aquaculture; assess which certifications mention animal welfare, and identify connections between animal welfare, public and environmental health.
- Examine trade policy and/or tariffs and their effects on seafood markets and trade.
- Assess federal permitting, subsidies, and funding for offshore aquaculture.
- Review recent developments in cell-culture and plant-based aquatic food products.

4. Sustainable Diets and Demand-side Solutions

What we eat and how these foods are produced have significant effects on human health and ecosystems, including climate, land, soil, air, water, and biodiversity. CLF explores these connections and provides evidence-based guidance for shifting toward dietary patterns that better align with individual and planetary health. CLF does this through its scientific and technical advisory role for Meatless Monday, as well as through other research and science translation activities. We also develop educational resources, messaging, and training about the benefits of plant-forward diets and best practices for implementation.

Examples of Past Projects with Students

- **Meatless Monday: A small-steps strategy that results in big dietary changes**
- Fixing nitrogen, fixing systems: The role of legumes in regenerative agriculture
- **Meatless Monday through the years: An analysis of 15 years of consumer surveys**
- Uncovering the “how to” of sustainable diets in long-term care facilities: A literature review of the barriers of and strategies for implementation while considering concerns for sarcopenia

Student Project Ideas

- How might consumer food choices and food environments influence or be influenced by animal agriculture practices and policies? Frame the connection and dependencies between different animal agricultural systems and healthy, sustainable consumption.
- Given the dynamic and evolving field of alternative proteins, how do we accurately assess food system, health, and environmental impacts and guide policies, institutions, and individuals toward optimal protein choices? Conduct a literature review and propose a rubric or framework to evaluate alt proteins and emerging technologies against health, environment, and other food system impacts.
- Consider the cultural knowledge and practices that deserve greater recognition and could inform meat reduction interventions. For example, how can public health learn from the sustainable foodways of Black and Indigenous communities? Propose a set of culturally informed pathways to behavior change, such as education and training/skills development and ways to improve food environments (e.g., accessibility, affordability).
- Explore Meatless Monday's reach and impact among younger consumers (Gen Z, Gen Alpha). Conduct an online survey of Meatless Monday's social media followers to understand, assess, and communicate social media's impact on replication, scaling up and translation of meat reduction as a practice.
- Develop an approach to conducting a set of "diet-climate conversations" in which participants have the space to share openly about their experiences and attitudes related to these topics. Consider the language surrounding concepts such as "planetary health" and "One Health," exploring how these ideas relate to food production and diets, as well as how they may diverge or overlap.
- Conduct a literature review on the effectiveness of "Food Is Medicine" programs to examine potential associations with meat purchasing and consumption. Do these programs include health education regarding meat consumption? Furthermore, does the prescription of fruits, vegetables, and other foods result in changes to meat consumption and purchasing behaviors? What other dietary strategies might be missing when addressing environmental sustainability of food choices?
- Are there effective and insightful ways that AI can be used to understand and influence consumer food choices, particularly focusing on health and sustainability? What are the benefits and drawbacks of using AI in these ways?
- Perform a scoping literature review on the backlash against meat reduction efforts.

- Examine the discourse around protein consumption, including one or more of the following: key voices and their messages, ways in which messages are amplified, key target audiences, and alignment between messages and evidence.
- Advocates have promoted “less but better” approaches to meat purchasing. To what extent do those purchasing meats produced in more sustainable ways actually purchase less meat than they would otherwise?
- What should be the top priority audiences for meat reduction initiatives, balancing factors such as amount of current consumption, openness to change, vulnerability to backlash, and youth (e.g., a lifetime of eating ahead)? There appears to be far more shift toward sustainable diets in Europe than in the U.S., with a recent European Commission report attributing the changes to environmental awareness and popularity of plant-based diets, in addition to meat prices. What can the U.S. learn from this (recognizing the substantial cultural differences)?
- Examine how One Health, One Welfare, and the meat paradox intersect, with a public health lens on food systems, consumer behavior, and animal welfare. The project would review the current literature on concern for animals, meat consumption, worldviews/attitudes/beliefs, and behavior change to identify where public health can uniquely contribute to shaping more humane and sustainable food choices.

5. Food, Climate and Resilience

Now more than ever, the world needs global collaboration and local action to prevent the catastrophic impacts of climate change on food security, ecosystems, and public health. This includes both mitigation of and adaptation to climate change. CLF’s research builds on robust evidence that addressing GHG emissions from livestock production and minimizing food waste are essential actions to mitigate the food system’s contribution to climate change. We also help food systems adapt to climate change and other threats by examining strategies that enhance food system resilience. We prioritize projects that address equity angles within these areas.

Examples of Past Projects with Students

- **Antibiotic footprints of the food supply: Dietary shifts and co-benefits for climate change mitigation**
- **A comparative national-level analysis of government food system resilience activities**

Student Project Ideas

- Describe use of funds from ARPA, IRA, and/or climate-smart agriculture programs within the US Department of Agriculture, in relation to food, climate, and meat production. How have these investments been affected by recent policy changes?
- Write a set of historical case examples of disasters that disrupted food systems including gathering data on food system-related costs.
- Help develop guidance for local food policy staff and advocates in obtaining leadership buy-in to invest in food system resilience planning. Research approaches used in other efforts to garner leadership support for prevention activities.
- Contribute to or carve out pieces from ongoing research on food waste and food donation. Projects include understanding policy drivers of food surplus, working on qualitative data analyses and manuscripts related to retail food donation and other topics, and working on manuscripts regarding typologies of communities that might respond similarly to food waste interventions.
- What countries or areas have been especially proactive in planning to increase food system resilience to disasters? What did they do? What do we know about the impacts of their efforts?