



MCURC
THE MENUS OF CHANGE
UNIVERSITY RESEARCH COLLABORATIVE

RESEARCH PORTFOLIO



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The Menus of Change University Research Collaborative (MCURC)—co-founded and led by the Culinary Institute of America (CIA), Stanford Residential & Dining Enterprises (R&DE), and Stanford Prevention Research Center—is a global network of 600+ forward-thinking college and university scholars, foodservice leaders, executive chefs, students, and administrators. Our mission is to move people toward healthier, more sustainable, and delicious foods using evidence-based research, education, and innovation.

At MCURC, we employ a groundbreaking research model built on a unique collaboration between faculty members, students, and university dining operators. Dining halls serve as living laboratories, turning meal times into dynamic learning environments where applied research merges with operational innovation, enabling experimental science to produce practical, real-world solutions. Through a multi-institution research model, we pilot interventions at a single university, then scale successful findings across our 85+ member institutions, collecting thousands of data points to refine and expand our impact.

The impact of this research extends far beyond university food systems. College and university students are tomorrow's leaders, parents, consumers, and citizens—shaping their beliefs and behaviors today is one of the most powerful strategies for fostering a healthier, more sustainable food system for the future.



Our primary research areas:



Plant-forward menu promotion:

Develop scalable, applied solutions to promote plant-forward eating and refine culinary techniques for healthier, more sustainable food choices.



Food waste reduction:

Identify and implement the most effective innovative interventions to reduce, upcycle, and prevent food waste within dining operations.



Increased food literacy:

Enhance knowledge of sustainable food choices for culinary staff as well as students, to shape lasting behavior change.

This Research Portfolio gathers all MCURC publications to date, both academic and operational, to showcase our contributions to the field. Operational research focuses on developing practical toolkits, actionable frameworks, and process improvement interventions that directly enhance dining operations. Academic research includes peer-reviewed manuscripts and journal publications that contribute to the broader scholarly understanding of campus dining, nutrition, and sustainability.

We are always looking to expand our research efforts and welcome collaboration with scholars, dining operators, industry leaders, and funders who share our vision for creating a healthier, more sustainable food future, one student, one meal at a time.

Check out [our website](#) to stay up to date on all the most current MCURC research projects.

If you have ideas for potential research or collaboration, feel free to reach out to MCURC co-director Abby Fammartino (abby.fammartino@culinary.edu) or our Research & Community Manager Valentina Córdoba (valentina.cordoba@culinary.edu). We'll be happy to explore them together!



OPERATIONAL PUBLICATIONS

Published: 2025

Publication: [Empowering Staff in Foodservice for Sustainable Impact A FoodWISE Approach to Reducing Food Waste](#)

Executive Summary: This six-month initiative (August 2024–January 2025) engaged ten diverse foodservice sites—including colleges, universities, and corporate locations—to test interactive food waste training, an employee idea generation challenge, and implementation of the winning idea. Across all sites, 140 employees submitted over 120 ideas, 83% of which were simple, low-cost actions requiring minimal effort to implement—demonstrating the strong potential of employee engagement in reducing back-of-house food waste.



Impact: Food waste reduction.

Food waste reduction. The FoodWISE project results show that structured employee engagement, consistent data collection, and cross-

departmental collaboration are key to driving measurable progress in food waste reduction. By centering manager-led strategies—such as staff training, improved forecasting, and operational adjustments—the project underscores how sustainability initiatives can align with business priorities to enhance efficiency and reduce costs.

Applicability: The FoodWISE Pilot can serve as a model for other foodservice operations seeking to build a culture of food waste reduction through employee engagement, leadership involvement, and standardized data practices. By demonstrating the value of structured training, consistent measurement, and cross-departmental collaboration, this report offers a replicable framework for institutions aiming to integrate food waste reduction strategies into daily operations.

Stakeholders: Foodservice signatories of the U.S. Food Waste Pact, the Pacific Coast Food Waste Commitment (PCFWC), WWF, ReFED, R&DE Stanford Food Institute, the Menus of Change University Research Collaborative (MCURC).



MCURC Collective Impact Initiative Protein Portfolio Analysis

Published: Latest publication, 2024

Publication: [MCURC Collective Impact Initiative: Progress Report, 2024](#)

Executive Summary: MCURC Collective Impact (CI) is a strategic initiative of data collection and impact analysis that empowers members by enhancing the understanding of their institutions' protein portfolios and the collective impact of the MCURC's combined protein purchases. The initiative is led by the R&DE Stanford Food Institute (SFI), whose experts collect, analyze, and communicate findings annually.

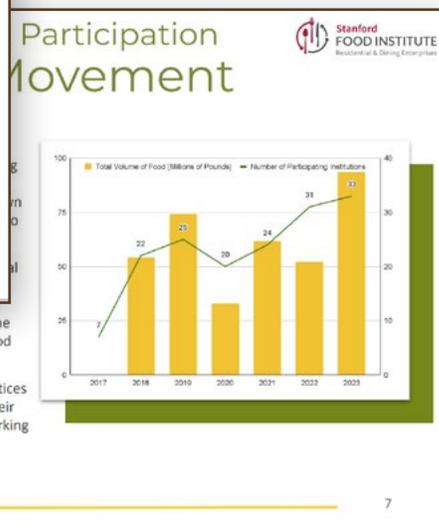


Impact: Plant-forward menu promotion. Protein has been determined by the Menus of Change initiative and related platforms to be the single most important area of change with respect to advancing healthier, more sustainable menus. The opportunities for reimagining our institutions' protein portfolios translate to tremendous potential for collective impact across the MCURC. Some schools go beyond protein to provide data on their total food

purchases, which are reflected in the individualized reports each institution receives from SFI. Protein purchases reflect the highest areas of opportunity given their outsize impact on both human and planetary health.

Applicability: The CI project can serve as a model for other foodservice sectors to collectively set and achieve food-related greenhouse gas emission reduction targets that can transform the sustainability of the industry overall.

Stakeholders: The R&DE Stanford Food Institute (SFI), the Menus of Change University Research Collaborative (MCURC) and more than 30 colleges and universities involved in data collection.



Repurpose with a Purpose

Published: 2024

Publication: [Toolkit, Report, and Recipe Collection](#)

Executive Summary: Over a 12-week period, 40 leaders from nine MCURC institutions came together for a research sprint to exchange learnings and develop best practices for reducing food waste through the power of creative repurposing, all while maintaining a plant-forward focus and supporting the Menus of Change Principles. In collaboration with ReFED, the leading food waste nonprofit in the U.S. and a valued MCURC Research Collaborator, the project leveraged data and analytical frameworks to generate new insights on the triple-bottom-line impact of creative food repurposing in campus dining settings.

The *Repurpose with a Purpose* [report](#) synthesizes the findings of this research sprint, presenting cost-effective, plant-forward strategies and recipes that incorporate high-quality prepped ingredients that would otherwise go to waste. This comprehensive report details the financial, environmental, and social impacts of repurposing in foodservice operations and is accompanied by a [toolkit](#) designed for foodservice operators.



Impact: Food waste reduction.

This practical toolkit, report, and recipe collection offer actionable, crowdsourced strategies from MCURC institutions to drive food waste reduction; from menu planning and production to daily operations, the toolkit offers solutions to fostering a culture of repurposing as a winning strategy for foodservice.

Applicability: The toolkit offers practical solutions to facilitate the implementation of the research findings. Applicable across various sectors, including campus dining, K-12, healthcare foodservice, and corporate dining, the toolkit provides actionable, crowdsourced strategies to support long-term food waste reduction efforts.

Stakeholders: The Menus of Change University Research Collaborative (MCURC), ReFED, Boston University, Rutgers University, San Jose State University, Stanford R&DE Dining, Hospitality, and Auxiliaries (SDHA), UCLA, University of North Texas, University of Reading, University of Bristol, Vanderbilt University.



The Plant-Forward Opportunity Report

Published: Annually since 2021. New report comes out every year.

Publications:

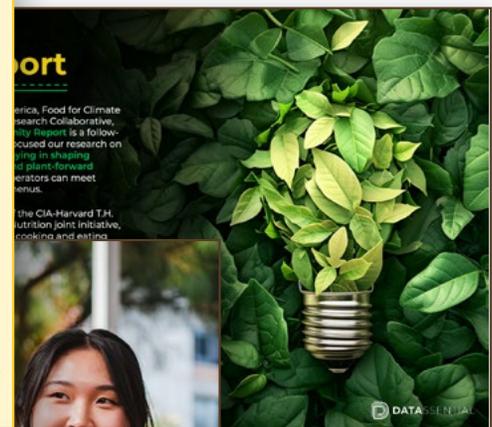
[2025 Plant Forward Opportunity Report](#) | [2024 Plant Forward Opportunity Report](#)
[2023 Plant-Forward Opportunity Report](#) | [2022 Plant-Forward Opportunity Report](#)
[2021 Plant-Forward Opportunity Report](#)

Executive Summary: This annual report examines current consumer attitudes, habits, and beliefs about plant-forward eating to identify opportunities for reducing reliance on animal-based foods in ways that are both approachable and appealing to diners. The [2025 report](#) focused on how consumers—particularly Gen Z—perceive and prioritize protein within plant-forward dining, exploring their preferences, understanding of protein quality, and how these perceptions influence dining choices. In 2024, the research investigated the role of digital media in shaping consumer expectations and perceptions of plant-forward offerings, helping chefs and foodservice operators better align menus with evolving consumer interests. Each year, the report introduces a new theme to deepen understanding of plant-forward dining behavior.

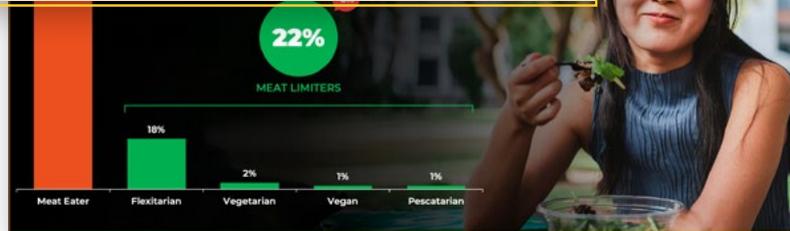


Impact: Plant-forward menu promotion. The framing of plant-forward is an outgrowth of the CIA-Harvard T.H. Chan School of Public Health—Department of Nutrition joint initiative, Menus of Change. The term plant-forward indicates “a style of cooking and eating that emphasizes and celebrates, but is not limited to, foods from plant sources—fruits and vegetables, whole grains, legumes, nuts and seeds, plant oils, and herbs and spices—and reflects evidence-based principles of health and sustainability.” In addition to whole, minimally processed—and often globally inspired—approaches to plant-forward eating, consumers also increasingly have wide-ranging choices around plant-based meat, dairy, and other products. Understanding consumers’ choices and behavior is the first step to improving their eating habits and promoting a plant-forward diet.

Stakeholders: Datassential, The



Culinary Institute of America (CIA), Food for Climate League (FCL), and the Menus of Change University Research Collaborative (MCURC).



of America (CIA), Food for Climate League (FCL), and the Menus of Change University Research Collaborative

Olive Oil and the Plant-Forward Kitchen

Published: 2021

Publication:

Olive Oil and the Plant-Forward Kitchen

Executive Summary: This report highlights a year-long collaborative effort involving more than 30 members of the MCURC Executive Chefs' Committee, who worked together to identify lesser-known, olive oil-based sauces that could be easily integrated into campus dining operations. The project showcases a collection of promising dishes and flavor strategies that have the potential to elevate campus dining and beyond. The findings aim to broaden the use and recognition of olive oil-based sauces in campus kitchens, offering innovative and practical solutions for healthy, flavorful condiments in dining operations.



Impact: Plant-forward menu promotion. As the culinary world faces the urgent need for a transformational shift toward plant-forward diets, this project offers

innovative solutions by showcasing the power of olive oil-based, plant-rich Mediterranean-inspired sauces that can accompany a large range of plant-based or plant-forward dishes. By embracing these options, we can de-emphasize reliance on animal products and shift towards healthier, whole, minimally processed plant foods.

Stakeholders: The Culinary Institute of America (CIA), The Menus of Change University Research Collaborative (MCURC), the International Olive Council.



The (Almost) Perfect Plant Forward University

Published: 2020

Publication: [The \(Almost\) Perfect Plant Forward University](#)

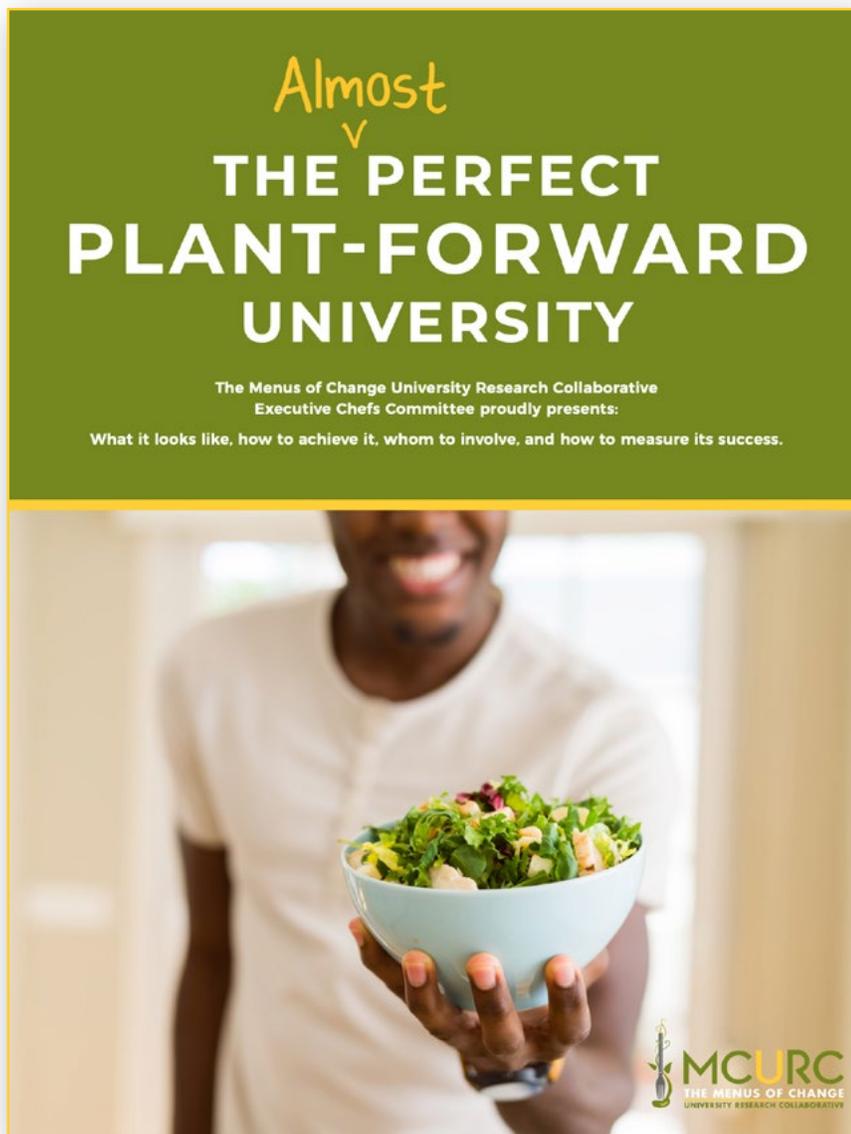
Executive Summary: This publication provides a framework to engage stakeholders, share practical strategies, recipes, and spark inspiration to create plant-forward dining experiences on campus. It paints a picture of a dining hall as a space that highlights vegetables, legumes, ancient grains, and fruits with dishes that celebrate global flavors and culinary creativity. It describes how dining halls can focus on right-sizing portions of sustainable animal proteins while offering plant-based options that provide variety and increase choice. This chef-authored guide emphasizes continuous improvement, tips for balancing challenges like budgets and student acceptance, and strives to transform campus dining to address global health and sustainability issues, without compromising on deliciousness.



Impact: Plant-forward menu promotion. This publication highlights chefs' knowledge and efforts to emphasize the importance

of a plant-centric diet. Universities are microcosms of societies worldwide, and an aspirationally perfect plant-forward dining hall can serve as a model on a smaller scale for how cities, regions, and even nations can embrace flexitarian diets—the scientifically recommended approach for supporting both human and planetary health in the long term.

Stakeholders: The Culinary Institute of America (CIA), the Menus of Change University Research Collaborative (MCURC), MCURC Executive Chefs Committee.



Faith in Fat

Published: 2020

Publication: [Faith in Fat](#)

Executive Summary: The Faith in Fat study seeks to evaluate university students' perceptions of fat in food, specifically examining whether students consider food healthier based on the type of fat used in its preparation—no fat, unsaturated fat (such as olive oil), or saturated fat (dairy-based fats like butter or ranch dressing). Building on a Rutgers University student pilot project, this research uses campus dining halls as “living laboratories” to investigate how different fats influence students' health perceptions. The study aims to provide insights into how fat content affects food choices and overall health perceptions among university students.



Impact: Increased food literacy.

Fat still has a bad reputation in most eaters' minds. This research shows how students lack knowledge about the role of healthy fat in their diets, highlighting

the need for nutrition education programs, such as food literacy initiatives and cooking classes, to help students understand the value of healthy fats. Experiential education, like Tasting Tables in dining halls, and well-crafted, educational signage, can show how fats promote healthier food choices. Educating chefs and dining staff about fat quality and usage enhances their ability to improve food literacy. By providing evidence-based information to trusted sources like coaches, chefs, and educators, this study empowers them to promote sustainable, health-conscious eating within university communities.

Stakeholders: The Culinary Institute of America (CIA), The Menus of Change University Research Collaborative (MCURC), Rutgers University, University of California Los Angeles (UCLA), Stanford University, University of California, Davis (UC Davis), Lebanon Valley College, and North Carolina State University.



Edgy Veggies Toolkit

Published: 2019

Publication: [Edgy Veggies Toolkit](#)

Executive Summary: The Edgy Veggies Toolkit helps restaurant managers, chefs, parents, or anyone who influences what other people eat implement taste-focused labels and menu descriptions as a research-proven way to increase the selection and consumption of healthy foods. In short, describing the tasty and enjoyable attributes of healthy foods makes people more likely to choose them. The toolkit was developed following the publication of the [DISH Study](#) (*Delicious Impressions Support Healthy Eating*) in the academic journal "[Psychological Science](#)", led by Dr. Brad Turnwald, which examined how flavor-focused menu language positively influenced vegetable selection and consumption in a multi-site university dining hall research study.



Impact: Plant-forward menu promotion. [The Edgy Veggies Toolkit](#) provides easy-to-implement solutions to create taste-focused labels and menu descriptions for healthy dishes.

People think healthy foods are depriving and bland, and emphasizing the healthy attributes can lead people to avoid them. Describing healthy food with indulgent and fun language, on the other hand, can positively influence people's mindsets and expectations, leading them to eat and enjoy more healthy food. This research has been cited in the WRI playbook, and inspired other further initiatives to reframe plant-forward meals in a more appealing way. By focusing on flavor, enjoyment, and creativity rather than health messaging alone, the Edgy Veggies Toolkit supports dining services, chefs, and institutions in shifting perceptions and increasing the desirability of sustainable, plant-forward options.

If scaled across the 750,000 meals served daily within the Menus of Change University Research Collaborative (MCURC), this approach could result in 38,000 more vegetable servings per day enjoyed in campus dining halls, promoting healthier, plant-forward diets.

Stakeholders: Mind and Body Lab at Stanford, The Culinary Institute of America (CIA), the Menus of Change University Research Collaborative (MCURC), Stanford Residential and Dining Enterprises (R&DE), Stanford Prevention Research Center (SPRC).



The Protein Flip

Published: 2018

Publication: [Protein Flip Strategies for College and University Foodservice.](#)

Executive Summary: This resource offers insights and creative menu ideas to help campus dining chefs implement [The Protein Flip](#), a concept that redefines the role of protein in food service. It highlights the urgency of shifting protein consumption patterns from a health and environmental perspective, urging chefs to embrace innovative approaches that resonate with diners. By flipping the emphasis from animal-based to plant-based proteins, this resource supports a broader educational initiative to equip chefs and the foodservice industry with the knowledge needed to address emerging health and sustainability challenges that are transforming our future.

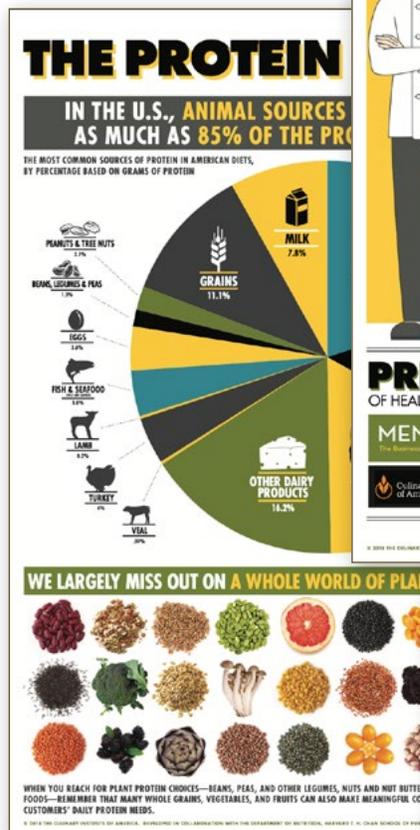


Impact: Plant-forward menu promotion. If global demand for livestock products continues its current trajectory, it could increase by 70% by 2050. Livestock production already occupies 30% of the world's land and contributes at least

18% of greenhouse gas emissions and 37% of methane emissions. Furthermore, higher consumption of red meat raises the risk of heart disease, stroke, and diabetes. In the U.S., animal-based sources account for up to 85% of protein intake, leaving a vast array of plant-based proteins underutilized.

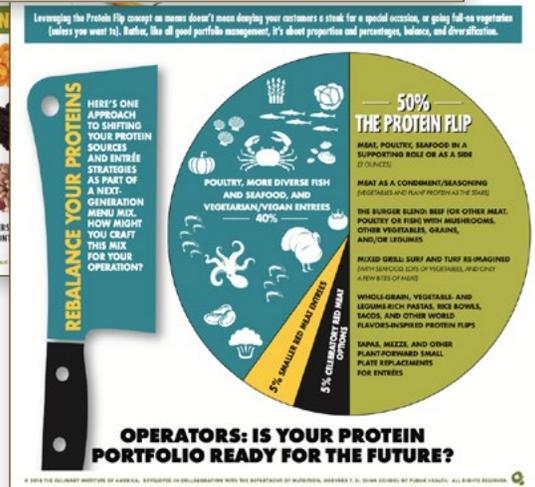
Consuming plant-based proteins is associated with a lower risk of chronic diseases and mortality, as well as a smaller carbon footprint compared to animal-based proteins. The shift toward plant-forward diets is vital for improving both human and planetary health.

Stakeholders: The Culinary Institute of America (CIA), the Menus of Change University Research Collaborative (MCURC), Stanford Residential and Dining Enterprises (R&DE), and the Harvard T.H. Chan School of Public Health-Department of Nutrition.



THE PROTEIN FLIP
HOW CAN CHEFS INSPIRE STRATEGIES TO FEED A WORLD OF 9-10 BILLION?
CHEFS CAN MAKE A TREMENDOUS IMPACT ON HUMAN AND PLANETARY HEALTH THROUGH THE PROTEIN FLIP.
Instead of feeding plants and grains to animals, feed them directly to diners...with much smaller amounts of accompanying animal protein.
Ask: "What level of global animal agricultural production in 2050 supports optimal public health and is environmentally sustainable?"
And: "How do we enlist chefs, behavioral specialists, and visionaries in design thinking and marketing to create patterns of food choices, dishes, and menus that flip the role of protein and fully meet consumer acceptance?"
It's also time for chefs to leave behind the habit of using "protein" as a synonym for "meat." Cultural shifts like these in the chef community can help broaden the general mindset about protein in the U.S.

PRINCIPLES OF HEALTHY, SUSTAINABLE MENUS
This strategy document highlights why it is essential to re-imagine the role of protein in foodservice, and how to do so in inventive ways that appeal to diners. This resource is part of a broader educational effort to help chefs and the foodservice industry stay ahead of health and environmental issues and trends that are reshaping our future. Read the *Menus of Change Principles of Healthy, Sustainable Menus* here.





ACADEMIC PUBLICATIONS

Training for Transformation: Examining Food Systems Courses at U.S. Land-Grant Universities

Authors: Charlie T. Hoffs, Nooran Chharan, Matthew J. Landry, Catherine P. Ward, Kemi A. Oyewole, May C. Wang, Sophie Egan, Janine Bruce, Christopher Gardner

Publication: 2024

Study published in *Frontiers in Sustainable Food Systems*

Abstract: Higher education institutions can play an essential role in preparing students to participate in movements for just and sustainable food systems change. For the past two decades, many United States land-grant universities (LGUs) have developed food systems education (FSE) courses. This study examined the extent to which FSE courses employ four capacities deemed crucial by the FSE literature: multidimensional approaches, interdisciplinarity, centering equity, and training students to take action in food systems.

The syllabi of 171 undergraduate courses at 20 LGUs were obtained by contacting instructors, and their course descriptions and learning outcomes were analyzed. This subset of LGUs were identified from the membership list of the Menu of Change University Research Collaborative (MCURC), a nationwide network of colleges using campus dining halls and classrooms as living laboratories for food systems change.

Most course descriptions and learning outcomes exhibited multidimensional approaches and interdisciplinarity. However, many failed to incorporate teaching content and practices that help students critically examine equity and social justice issues in food systems, or engage in transformative change. LGUs have both the resources and urgent responsibility to empower students to be part of movements to transform unjust, unsustainable food systems.



Impact: Increased food literacy. The findings of this study, and an accompanying open-access syllabus website, aim to accelerate the development of FSE curricula that prepare students to change food systems.

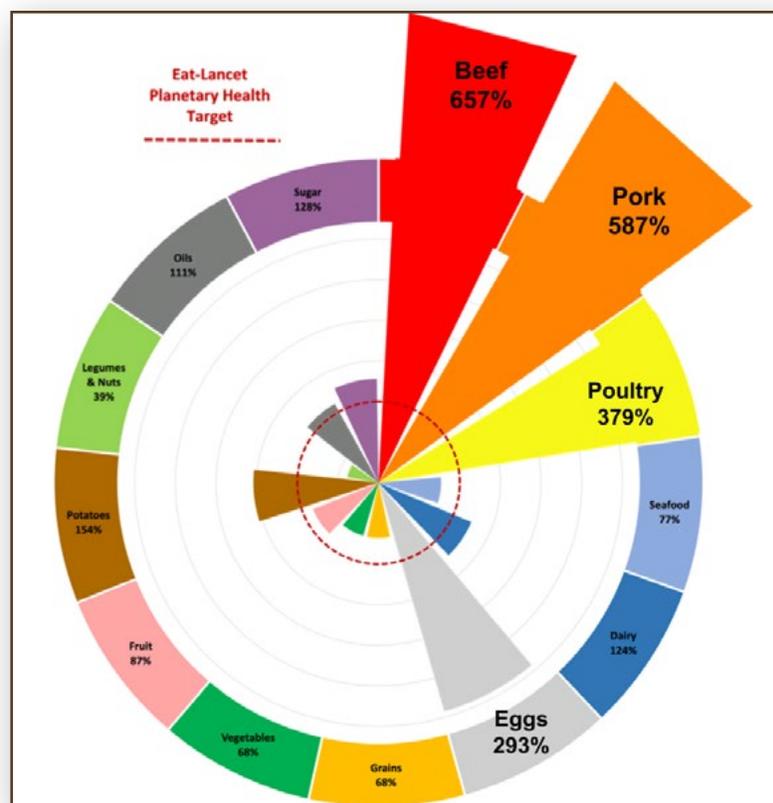
Evaluating Food Procurement against the EAT-Lancet Planetary Health Diet in a Sample of U.S. Universities

Authors: Jaclyn Bertoldo, Abby Fammartino, Sophie Egan, Roni A. Neff, Rebecca Grekin, and Julia A. Wolfson

Publication: 2024

Study published in *International Journal of Environmental Research and Public Health*

Abstract: Aligning institutional food procurement with planetary health targets offers opportunities to improve nutrition and reduce food-related greenhouse gas (GHG) emissions. This study compared foods procured by 19 university dining programs in the U.S. in 2022 with the EAT-Lancet planetary health diet. Each university's procurement was then modeled to align with the EAT-Lancet planetary health diet, and changes to Healthy Eating Index (HEI) scores and GHG emissions were evaluated. For a subset of universities that provided cost data, changes in annual total food costs were also estimated. Universities in this study exceeded EAT-Lancet planetary health targets for beef ($x = 657\%$ of target), pork ($x = 587\%$), poultry ($x = 379\%$), and eggs ($x = 293\%$). All universities failed to achieve planetary health targets for legumes and nuts ($x = 39\%$ of the target) and vegetables ($x = 68\%$). Aligning food procurement with the planetary health diet would result in an estimated average 46.1% reduction in GHG emissions and a 19.7 point increase in HEI scores. Universities that provided cost data saw an average 9.7% reduction in food costs in the EAT-Lancet-aligned scenario. The procurement metrics assessed in this study can help university dining programs and other institutional food service organizations set goals and monitor progress toward planetary health targets.



Impact: Plant-forward menu promotion. This study was the first of its kind to leverage procurement data as a way to evaluate food programs' alignment with EAT-Lancet planetary health targets. This novel approach of using procurement data to set plant-forward targets and evaluate impacts of plant-forward strategies is being adapted across a variety of different foodservice settings. Results from this study also indicate that there may be cost benefits to shifting procurement towards EAT-Lancet planetary health targets, which has inspired strategies to identify the most cost-effective pathways for foodservice operators to improve the nutrition and environmental impacts of their food purchases. As new tools become available to more efficiently and accurately analyze procurement data, operators will be empowered with data-driven insights to identify the best and most cost-effective strategies for achieving healthy, sustainable, and delicious menus. For more information, see the [Collective Impact Initiative Progress Report](#).

Food Waste Management Practices and Barriers to Progress in the U.S. University Foodservice

Authors: Aviva A. Musicus, Ghislaine C. Amsler Challamel, Robert McKenzie, Eric B. Rimm, Stacy A. Blondin

Publication: 2022

Study published in *International Journal of Environmental Research and Public Health*

Abstract: Identifying institutional capacity to reduce and reallocate food waste is important to reduce both greenhouse gas emissions and food insecurity. The goal of this study was to examine food waste concern, reduction and repurposing strategies, and perceived barriers to these strategies among U.S. university foodservice representatives. We surveyed 57 U.S. university foodservice representatives about foodservice operations, campus food insecurity, food waste reduction and repurposing activities, and obstacles to composting and donating food waste. Data were collected September 2019–February 2020. Roughly three-quarters of respondents tracked campus food waste, reported that food waste reduction was a high/very high priority, and reported concern about campus food insecurity. The most common food-waste-reduction strategies included forecasting demand to prevent overproduction and preparing smaller batches. The most common repurposing strategies included donation and composting. Top barriers to food donation included liability concerns and lack of labor. Barriers to composting food included lack of infrastructure and knowledge/experience. Addressing perceived barriers to university food services' food waste reduction and repurposing efforts could lead to reduced greenhouse gas emissions and improved food security for millions of Americans.



Impact: Food waste reduction. Leaders can use these findings to prioritize operational optimization—through menu planning, production flows, and forecasting—as well as strategic investments—in waste tracking systems, staff training, and food donation partnerships—while reinforcing institutional commitments to climate action and food security. This publication also underscores the urgency of standardizing measurement approaches, enabling collaborative impact across institutions. For campuses navigating rising food costs and student food insecurity, the insights in this study are especially timely and practical.

Food Choice and Waste in University Dining Commons—A Menus of Change University Research Collaborative Study

Authors: Tiffany Wiriyaphanich, Jean-Xavier Guinard, Edward Spang, Ghislaine Amsler Challamel, Robert T. Valgenti, Danielle Sinclair, Samantha Lubow, Eleanor Putnam-Farr

Publication: 2021

Study published in *Foods*

Abstract: The purpose of this multi-campus research was to investigate the relationships of food type and personal factors with food choice, consumption, and waste behaviors of college students at all-you-care-to-eat dining facilities. The amount of food taken and wasted was indirectly measured in units relative to the plate size using before and after photos taken by the diners themselves. Animal protein and mixed dishes (e.g., stir fry, sandwich) took up more of diners' plate space and these items were correlated to both greater hedonic appeal as well as a higher likelihood of the item being pre-plated. Greater confidence in liking an item before choosing it was correlated to a larger portion being taken. Finally, increased satisfaction with the meal and frequency of visiting the dining commons was correlated to less food waste.



Impact: Food waste reduction.

Understanding these potential food choice drivers can help dining facilities better target healthier meals to diners while reducing food waste.



Faith in Fat: A Multisite Examination of University Students' Perceptions of Fat in the Diet

Authors: Matthew J. Landry, Jasmine M. Olvany, Megan P. Mueller, Tiffany Chen, Dana Ikeda, Danielle Sinclair, Lesley E. Schatz, Priscilla Connors, Robert T. Valgenti, Ghislaine Amsler Challamel, Christopher D. Gardner, Peggy Policastro

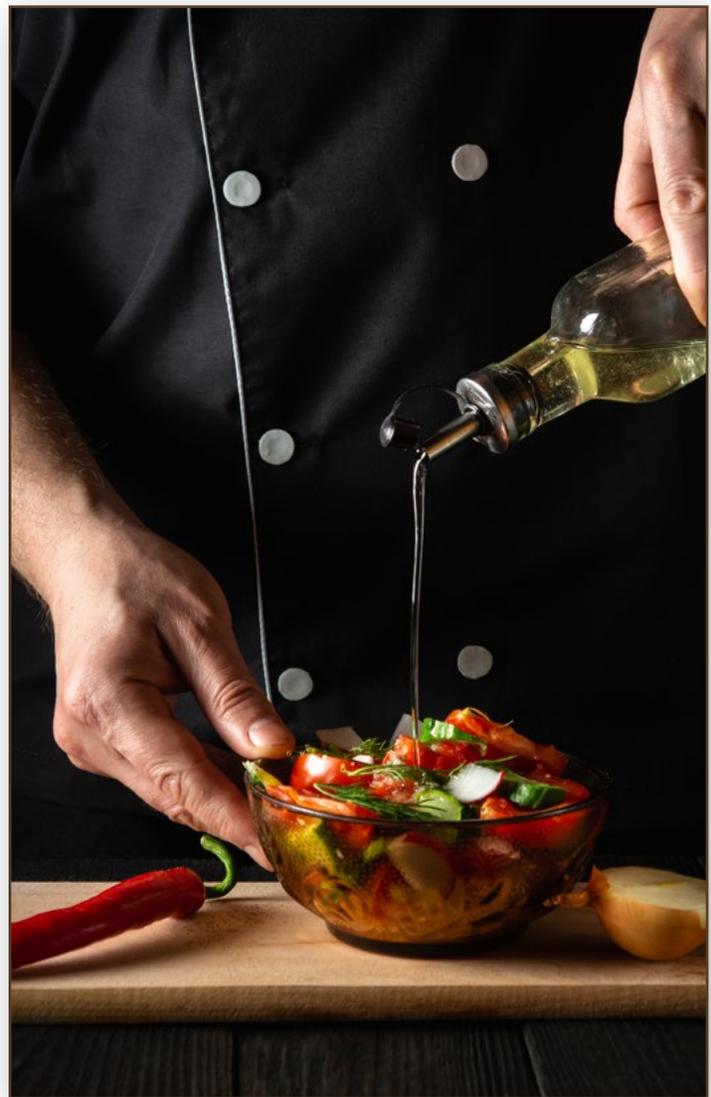
Publication: 2020

Study published in *Nutrients*.

Abstract: Despite recent relaxation of restrictions on dietary fat consumption in dietary guidelines, there remains a collective “fear of fat”. This study examined college students' perceptions of health among foods with no fat relative to foods with different types of fats (unsaturated and saturated). Utilizing a multisite approach, this study collected data from college students at six university dining halls throughout the United States. Data were available on 533 students. Participants were 52% male and consisted largely of first-year students (43%). Across three meal types, the no-fat preparation option was chosen 73% of the time, the unsaturated fat option was selected 23% of the time, and the saturated fat option was chosen 4% of the time. Students chose the no-fat option for all meal types 44% of the time. Findings suggest that college students lack knowledge regarding the vital role played by the type and amount of fats within a healthy diet.



Impact: Increased food literacy. Nutrition education and food system reforms are needed to help consumers understand that type of fat is more important than total amount of fat. Efforts across various sectors can encourage incorporating, rather than avoiding, fats within healthy dietary patterns. See operational publication [here](#).



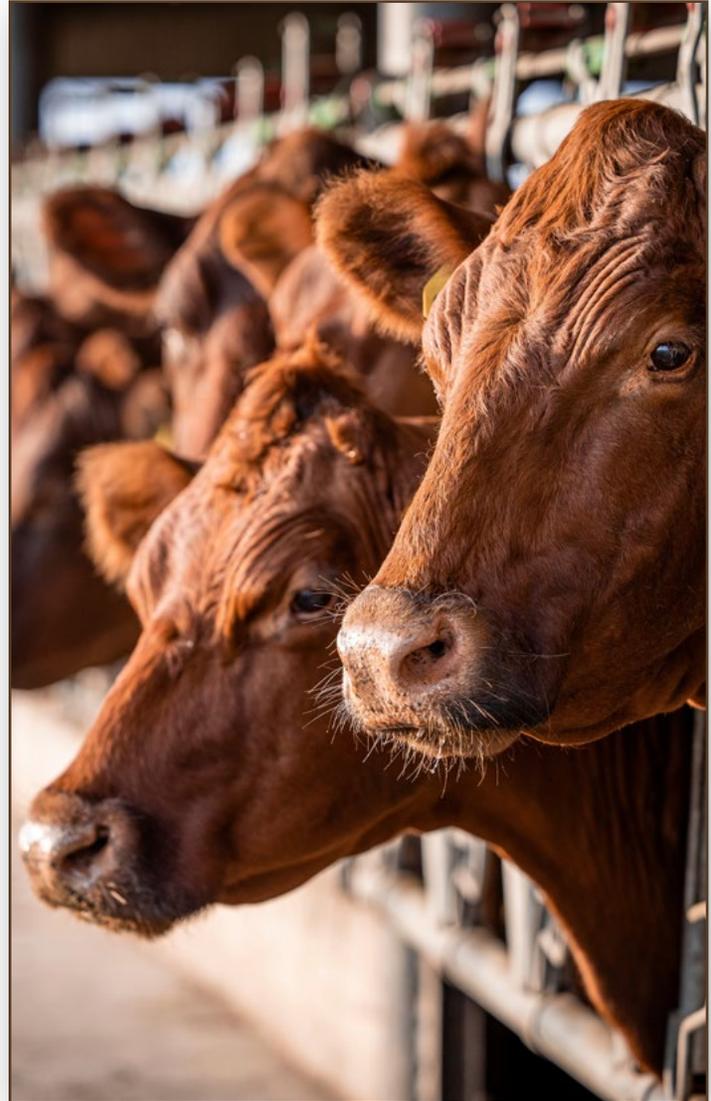
Impact of a Scalable, Multi-Campus “Foodprint” Seminar on College Students’ Dietary Intake and Dietary Carbon Footprint

Authors: Hannah Malan, Ghislaine Amsler Challamel, Dara Silverstein, Charlie Hoffs, Edward Spang, Sara A. Pace, Benji Lee Reade Malagueño, Christopher D. Gardner, May C. Wang, Wendelin Slusser, Jennifer A. Jay

Publication: 2020

Study published in *Nutrients*.

Abstract: Dietary patterns affect both human health and environmental sustainability. Prior research found a ten-unit course on food systems and environmental sustainability shifted dietary intake and reduced dietary carbon footprint among college students. This research evaluated the impact of a similar, more scalable one-unit Foodprint seminar taught at multiple universities. **Methods:** We used a quasi-experimental pre-post nonequivalent comparison group design (n = 176). As part of the Menus of Change University Research Collaborative, research was conducted at three university campuses in California over four academic terms. All campuses used the same curriculum, which incorporates academic readings, group discussions, and skills-based exercises to evaluate the environmental footprint of different foods. The comparison group comprised students taking unrelated one-unit courses at the same universities. A questionnaire was administered at the beginning and end of each term. **Results:** Students who took the Foodprint seminar significantly improved their reported vegetable intake by 4.7 weekly servings relative to the comparison group. They also reported significantly decreasing intake of ruminant meat and sugar-sweetened beverages. As a result of dietary shifts, Foodprint seminar students were estimated to have significantly decreased their dietary carbon footprint by 14%. **Conclusions:** A scalable, one-unit Foodprint seminar may simultaneously promote environmental sustainability and human health.



Impact: Increased food literacy. Faculty will find this research useful in designing rigorous, interdisciplinary courses that go beyond knowledge acquisition to promote lasting, real-world behavior change—advancing climate, health, and equity outcomes through education. The seminar’s format and curriculum are openly available and highly adaptable for use in diverse academic settings.

Effects of Taste-Focused vs. Health-Focused Labels on Vegetable Selection and Consumption in University Dining Halls: A Randomized Controlled Multi-Site Intervention

Authors: Bradley P. Turnwald, Jaclyn D. Bertoldo, Margaret A. Perry, Peggy Policastro, Maureen Timmons, Christopher Bosso, Priscilla Connors, Robert T. Valgenti, Lindsey Pine, Ghislaine Challamel, Christopher D. Gardner, Alia J. Crum

Publication: 2019

Study published in *Psychological Science*.

Abstract: Healthy food labels tout health benefits, yet most people prioritize tastiness in the moment of food choice. In a preregistered intervention, we tested whether taste-focused labels compared with health-focused labels increased vegetable intake at five university dining halls throughout the United States. Across 137,842 diner decisions, 185 days, and 24 vegetable types, taste-focused labels increased vegetable selection by 29% compared with health-focused labels and by 14% compared with basic labels. Vegetable consumption also increased. Supplementary studies further probed the mediators, moderators, and boundaries of these effects. Increased expectations of a positive taste experience mediated the effect of taste-focused labels on vegetable selection. Moderation tests revealed greater effects in settings that served tastier vegetable recipes. Taste-focused labels outperformed labels that merely contained positive words, fancy words, or lists of ingredients. Together, these studies show that emphasizing tasty and enjoyable attributes increases vegetable intake in real-world settings in which vegetables compete with less healthy options. First piloted at Stanford, the study found that taste-focused labels (e.g., twisted citrus-glazed carrots) increased vegetable selection by 25% compared to basic labels and 41% compared to health-focused labels. Replicated across five MCURC universities and analyzing 138,000 diner decisions, the study demonstrated that taste-focused labeling led to a 29% increase in vegetable selection compared to health-focused labels and 14% more compared to basic labels. Moreover, actual vegetable consumption increased by 39%, as measured by the difference between what diners served themselves and what was left in compost.



Impact: Plant-forward menu promotion. This study is part of a broader project to make healthy foods more crave-worthy and less like something we tolerate because they're good for us, including the [Edgy Veggies Toolkit](#), which gives users the resources they need to add edgy descriptions to dishes that can benefit most from indulgent language.

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