

University of Vermont USDA FASE Programs

Multiple researchers are benefitting from the USDA NIFA AFRI FASE program. Below, we highlight several ongoing projects. Importantly, UVM researchers are actively pursuing FASE funding in recent years. Most of our projects have been awarded since 2020.

University of Vermont
Burlington, VT 05405

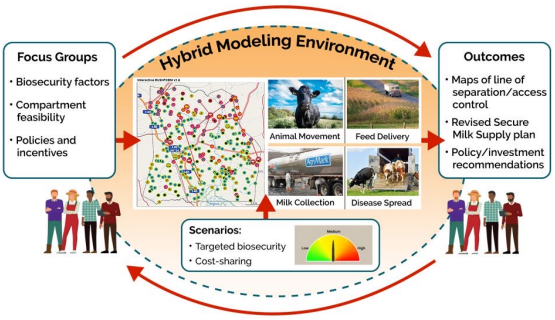
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Overview and Impact of UVM USDA FASE Projects FY21-22

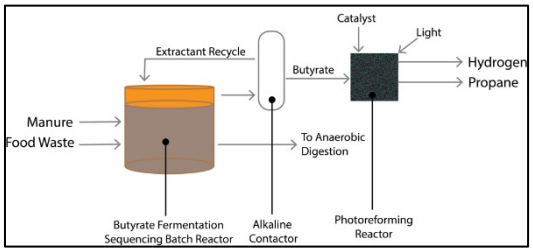
The **Seeding Food Resilience** program at UVM, led by David Conner, Professor of Community Development and Applied Economics, has helped to establish an educational, research, and outreach partnership with the University of Puerto Rico at Mayagüez, with the goal of fostering food resilience in Vermont, Puerto Rico, and beyond. Their collaboration builds on the respective strengths of each region to conduct research and outreach addressing food systems vulnerabilities faced by our regions. This asset-based, multi-region approach allows us to identify specific opportunities for building resilience in each region as well as opportunities for sharing expertise across regions. Findings have informed the creation of the *Food Resilience Toolkit*. Aimed at extension professionals, nonprofit leaders, and community organizers, the *Toolkit* combines our research findings with introductory tools and concepts for applied social science research. The toolkit is available in both written and video formats in English and Spanish. We conducted four workshops (two each in VT and PR) where we presented focus group findings, vetted the toolkit, and solicited ideas for next steps. As a result:
1) Stakeholders in each region are more familiar with the concept of food resilience, its importance, and tools and best practices for improving resilience capacities; and
2) Researchers and stakeholders in and across each region have strengthened partnerships to study and plan for food resilience.



Julie Smith, Animal and Veterinary Sciences, is leading a project to **enhance the readiness of the dairy industry** in the New England milkshed to step up biosecurity to mitigate the impacts of foot-and-mouth disease (FMD) if detected anywhere in the United States. With industry input, UVM researchers are creating an advanced simulation model, which incorporates regional milk movements and biosecurity, and are evaluating incentive policies that could foster FMD readiness in the New England milkshed. The *economic impact of the project* can be equated to the value of the dairy production protected. In Vermont alone, annually, 2.5 billion pounds of milk generates $550,000 (at $22 per hundredweight at the farm gate) that circulates through the rural economy. Farms also maintain “open” land and contribute to food security for the region. One master’s student and one doctoral student in Animal Biosciences are being trained under this project.



PI Matthew Scarborough and Co-PI Raju Badireddy received a $300,000 grant from USDA NIFA AFRI FASE (Bioprocessing) to **examine the production of propane from cow manure**. This involves a two-stage process of using microbial communities to ferment cow manure to butyric acid and a photocatalytic process to convert butyric acid to propane. The University of Vermont team is partnering with Co-PI Andrea Hicks at the University of Wisconsin- Madison to assess the technoeconomic feasibility and environmental life cycle impacts of the proposed process. If successful, propane production from manure would further expand the spectrum of products that can be produced from agricultural wastes beyond electricity and natural gas and provide new revenue streams for farmers.



Success Stories

In March 2022, a team of UVM faculty, staff, and graduate students travelled to Mayagüez, Puerto Rico for a series of tours and a food resilience workshop with outreach professionals and community leaders. In July, UPRM faculty, graduate students, and community partners journeyed north to Vermont for a series of tours and a workshop in our region.



These exchanges taught both teams so much about the strengths, challenges, and innovative resilience-building strategies in our respective regions. In Puerto Rico we visited Asociación Pro-Bienestar Barrio Marías de Aguada and Fundación Bucarabón, two different community organizations that took over abandoned school buildings to create food access and job training programs. We learned about how they responded to disasters including Hurricane María and the Covid-19 pandemic by addressing immediate need and creating long-term plans to improve their community's resilience. In Vermont, we brought our colleagues on two days of tours in Chittenden County and Washington County. We learned about Farm-to-Institution and food access programs at UVM Medical Center and the Intervale and visited multiple farms and food producers to discuss local supply chains, value-added production, farm business planning, and gleaning programs.

Through our 2022 visits and several years of collaboration, we have learned that, despite differences in latitude, climate, language, culture, and political status, Vermont and Puerto Rico share many community development and food system challenges. These include affordable housing, job opportunities for young people, farm viability (especially small-scale dairy farms), land tenure, and competition from cheap imported foods. These challenges can compromise the ability of our food systems to withstand and recover from shocks such as natural disasters, climate change, and public health crises. But we also learned that both regions are full of talented and passionate people working to address these challenges in innovative ways. By sharing our expertise and strategies across regions, we can contribute to the collective project of building a more resilient food system.

Statewide USDA FASE Funding FY21-22

Program/Grant Name	Type / Institution	FY	Cong District	Amount
Production of propane from agricultural wastes (PI: Matthew Scarborough (PI), Appala Raju Badireddy (Co-PI), Andrea Hicks (UW-Madison, Co-PI; Award 2022-67022-37608)	FASE Strengthening Standard/ UVM	2022	VT	$150,921
A Systems Approach to Securing the New England Milk Supply in the Event of a Foot-and-Mouth Disease Outbreak (PI: Julie Smith; Award 2022-69014-37041)	FASE Strengthening Standard/ UVM	2022	VT	$336,849
Seeding Food Resilience Through Anchor Institutions (PI: David Conner, Award 2021-67024-34436)	FASE Strengthening Standard/ UVM	2022	VT	$139,995
Identifying Gene Expression Profiles Associated with Enhanced Stress Tolerance in Outbreak and Non-Outbreak Associated Salmonella Enterica (PI: Andrea Etter, Award 2020-67018-30781)	FASE Strengthening Standard/ UVM	2022	VT	$199,815
			Total Funds	**$827,580**