

2023 ANNUAL REPORT
Regional Research Project S-1088

Project Number: S-1088

Project Title: Specialty Crops and Food Systems: Exploring Markets, Supply Chains and Policy Dimensions

Chair: Esendugue Greg Fonsah, University of Georgia, Tifton, GA

Chair-Elect: Suzanne Thornsby, University of Florida (UFL)

Period Covered: December 1, 2022 through November 30, 2023

Date of this Report: February 19, 2024

Annual Meeting: November 12, 2023 (in-person and virtual)

Summary of Minutes from November 12, 2023 Annual Meeting

Participants:

- Zapata, Samuel – Texas A&M, Samuel.zapata@ag.tamu.edu
- Woods, Tim – University of Kentucky, tim.woods@uky.edu
- Collart, Alba (Mississippi State), collart@agecon.msstate.edu
- Govindasamy, Ramu – Rutgers, govind@sebs.rutgers.edu
- Fonsah, Esendugue Greg – UGA, gfonsh@uga.edu
- Boys, Kathryn – NCSU, kaboys@ncsu.edu
- Gallardo, Karina – Washington State (Virtual attendee), karina_gallardo@wsu.edu
- Sterns, James – Oregon State (Virtual attendee), jasterns@oregonstate.edu
- Torres Bravo, Ariana P (Purdue), torres2@purdue.edu
- Jablonski, Becca (Representing Dawn Thilmany) – Colorado State, becca.jablonski@colostate.edu and Dawn.thilmany@colostate.edu
- Wechsler, Seth J. (USDA, ERS), seth.wechsler@usda.gov
- Huang, Kuan-Ming (MSU), kmh1169@msstate.edu

The meeting was called to order by Esendugue Greg Fonsah 12 noon Eastern Time.

1. The Chair began the meeting by welcoming members and thanking the Past President for her leadership.
2. Thereafter, the agenda and our S-1088 multi-state group objectives we reviewed.
3. The minutes from the 2023 S-1088 meeting were approved by Tim Woods (UKy) and Ramu Govindasamy (Rutgers) and motion passed.

State Reports

1. Each member was given five minutes to provide state reports and submit the full report after

- the meeting for those who had not yet submitted.
2. Our special guest Seth J. Wechsler (USDA, ERS), Liability Insurance presented poultry anti-microbial resistance project.
 3. Members in attendance discussed the following two AAEA Track submission proposal ideas to be submitted to the Specialty Crop Economics (SCE) section:
 - a. Controlled Environment Agriculture (CEA), with Tim Woods as the PI., University of Kentucky, and;
 - b. Grape production / Wine Industry with James Sterns as PI, from Oregon State University. This track will be proposed as a joint session with the Brewing & Enology Economic Research (BEER) section.
 - c. Interested members were encourage to reach out to the two Principal Investigators, Dr. Tim Woods (UKy) and Dr. James Sterns (Oregon) as quickly as possible, especially that, “the particular focus of these sessions will be determined by the work of those who wish to collaborate. A wide range of topics were mentioned for both topics including effectiveness of various production technologies, assessments of consumer demand, marketing strategies, industrial organization, and economic impact assessments”.
 4. Due to time constraints, the group did not find solutions to, “the challenges that many members of our group experience when collaborating with those from other disciplines. Given the focus of their work, this commonly happens with collaborators from horticultural science, [whereby] members are very often invited to join grant application teams quite late in the process and asked to take on large amounts of work for a very insufficient budget to complete the requested tasks. It was suggested that this group members develop or contribute to a session for best practices for transdisciplinary projects; it was equally suggested that it would be useful for this be held at horticultural science events such as through a symposium session at a major horticulture conference. In addition, it was suggested that an infographic be developed which describes best practices for incorporating economists (and others) into multidisciplinary grant teams”. The Southern Agricultural Association Society (SAAS) Annual Conference is usually held concurrently in the first week of February of each with the Southern Agricultural Economics Association (SAEA) Conference. For example, the SAAS/SAEA Conference was held February 3-6, 2024 in Atlanta, GA. This group could target to present our concerns concerning collaborations with the SAAS Scientist in their next up-coming Annual conference from January 30 – February 04, 2025.
 5. The group was impressed with the number of new members that were present. Members were encouraged to reach out to potential new members and introduce them to the group.
 6. The group was not able to identify a possible Chair-elect but decided to do so via email correspondence.
 7. The meeting was adjourned at 3 PM Eastern Time.
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YEARLY REPORT ORGANIZED BY OBJECTIVE

Objective 1

- 1. Develop demand and market valuation models for the produce sector that can be used to evaluate effects of increasingly complex product differentiation schemes (agritourism, organic, enhanced health claims, biodynamic), trade, commodity marketing programs, labeling programs (technology adoption, local, food miles, Fair Trade), traceability systems, and food safety events in the U.S. produce markets.*

Summary

We conducted a variety of research projects related to Objective 1.

For instance, agritourism has the potential to offer diverse experiences to its target audience by combining agriculture and tourism. Ramu Govindasamy (Rutgers) investigated the impact of factors that increase the likelihood of target audiences participating in agritourism activities by conducting an online survey with 1,246 respondents. Participants were selected proportionally to each state's population from a dataset of 2,620 respondents covering states New York, Delaware, New Jersey, North Carolina, Virginia, Maryland, Pennsylvania, District of Columbia, collected between March 7 and 15, 2021. Data were analyzed using binary logistic regression with participant demographics, income, prior local food system participation, and knowledge as predictors. Their findings depicted that middle-aged and younger people, those distanced from agricultural activities, individuals interested in agriculture, people generally residing in cities, and those with higher income levels are more likely to participate in agritourism.

At Utah State University (USU), our team member, Kynda Curtis is conducting research on local foods marketing, farmers' markets and agritourism. They are also conducting research on local cut flower marketing where a website: <https://extension.usu.edu/apec/cut-flower-marketing> was created and have thus far received 54 visitors and 234 total downloads from Extension fact sheets published from this project and organic wheat project concomitantly.

Karina Gallardo (Washington State University) also investigated the adoption of production and processing practices such as irradiation, adaptation to climate extremes, and novel technologies at the field level, such as mechanical harvesting practices. The team also looked at the acceptance of novel technologies at the consumer level for gene-edited crops and livestock. These conducted research addresses both the changing production environment and the consumer preferences and needs that will be explored and government and industry-led programs aiming to address consumer preferences and needs while guaranteeing the viability of farm businesses. Electric power plays a large and important role in specialty crop production and the food supply chain. Reducing carbon emissions is increasing important and incorporating alternative energy can be challenging due to uncertainties and known periods when generation is not possible in wind and solar power production. In such an environment, incorporating flexible demand response can help improve power system resilience and economic efficiency and help improve resiliency in the supply chain.

Impact

Our work in this area has been pivotal in assisting growers, stakeholders, policy-makers with sufficient information needed to navigate the challenges they encounter and facilitated their day-to-day decision-making process in order to stay afloat during these challenging times. More so, our team work on agritourism, adoption of production and processing practices, irradiation, climate extremes, and mechanical harvesting technologies enhances understanding of the changing environment for farmers and informs future research needs and Extension programming across our states.

Objective 2

Analyze the relative benefits and costs, to producers and consumers, of government and industry-led marketing and policy programs (certifications, Country of origin labeling, farmers markets, California/Arizona Leafy Greens Marketing Agreements) using both theoretical approaches and empirical evidence from multi-state applied research projects.

Summary

Our group continued to engage in research related to Objective 2. For instance:

This group was involved in research investigating food screening in the Pacific Islands (Micronesia) where Dr. Ramu Govindasamy (Rutgers) has completed a survey to explore specialty crops. They have also finished a project on local foods and agritourism, culturally preferred vegetables produce and they investigated the breeding program for “amaranth” content, a non-GMO variety. On the other hand, Karina Gallardo (Washington State) investigated technology adoption, traits that trigger consumers willingness to purchase (WTP), storage technology for apples and price elasticity. She and Brad Rickard conducted research on Enology, i.e., investigating wine and wineries in Minnesota. The group also researched on disease problems plaguing specialty crops with emphasis on new disease control practices for blueberries and cherries. They also researched on “near neighbor adopter of technology adoption” and the willingness of potential H2A workers to work. We continued to conduct research on labor issues. For instance, Dawn Thilmany and Becca Jablonski (Colorado State University) worked on co-op agreements, looking at various counterfactuals and developing various calculators. They looked at “right size infrastructure”, farm-to-school in Denver and New York State using ARMS data. The team is working on updating ERS trends report and other local foods data.

Our members, Bonanno, Alessandro, Costanigro, Marco and Dawn Thilmany (Colorado State University) finished a project and a new calculator to help projects make the connection between economic contributions to produce markets and public health initiatives, with a specific focus on the GUSNIP program. <https://www.nutritionincentivehub.org/resources/economic-impact-calculator>. Through COVID-based projects with the USDA Ag Marketing Service, our team members from CSU collaborated with Kentucky and Arkansas, to highlight strategies and best practices that have allowed local and regional food businesses to stay viable during the pandemic. A third round of a post-COVID consumer survey for late 2023 was distributed and the results will be shared 2024. They were successful in securing a new USDA Regional Food Business Center grant with Oregon State, Washington State, Idaho, Wyoming and Montana State, and

although partners emanated from their Extension rather than research teams, we see it complementing our S-1088 Committee's work.

Our group was also involved in research on impacts of smoke, sensors and coating. For instance, James Sterns (Oregon State) obtained a grant that investigates smoke impacts on grape flavor, and wine in the Northwest Oregon. Our group was also working with food science scientists to develop a coating that prevents smoke from getting into grapes. Tim Dilbridge (Oregon State) is also conducting research with the Grass seed industry, ecofriendly pollinator friendly lawns and mechanization. While Esendugue Greg Fonsah (UGA) along with colleagues from Texas, California are working on a joint SCRI Grant on machine harvester for onion production in the United States.

We conducted research to determine how specialty crop production could contribute to overall economy (Mississippi State University). They carried out research on controlled environment system (CEA) and result depicted that investors doubled down on investments. Xiaoyong Zheng (North Carolina State University) is studying the effects of policy changes in the WIC program in 2009 lead on program participants' likelihood to purchase more healthy food, especially fruits and vegetables relative to highly processed food items, as well as the effects of such policy changes on retail food prices. This work stems from a USDA-NIFA-AFRI funded Grant in collaboration with Chen Zhen (UGA) focusing on the impacts of WIC on food purchases, diet quality and market prices.

Impact

Our work in this area has been pivotal in assisting growers, stakeholders, policy-makers with sufficient information needed to navigate the challenges they encounter and facilitated their day-to-day decision-making process in order to stay afloat during these challenging times. More so, our team work on food screening in the Pacific, investigating traits that trigger consumers' willingness to purchase (WTP), storage technology for apples and price elasticity, work on H2A and labor issues in general, making the connection between economic contributions to produce markets and public health initiatives, post-Covid consumer survey and controlled environment system also enhances understanding of the changing environment for farmers and informs future research needs and Extension programming across our states.

Objective 3

Assess the changing coordination and supply chain management strategies being implemented in the fruit and vegetable sector and identify strategic organizational and marketing implications for a set of firms that are diverse in terms of commodity, marketing approach and size of operation (including small and mid-size farms).

Summary

A variety of research was conducted by our group to fulfill objective 3. For instance, Esendugue Greg Fonsah (UGA) conducted and developed specialty crops (Vegetables, fruits and nut tree crops) sensitivity risk-rated enterprise budgets which captured the abrupt increase in production input prices (e.g., variable costs, harvesting and marketing costs, and fixed costs) respectively and how these volatile prices affected profit margins for certain

crops. Still at UGA, studies were conducted by our team members on increasing input prices, supply chain disruptions, global competitiveness and trade policies affecting the vegetable industry. Another important research conducted was the economic evaluation of bell pepper production under colored shade nets system in the southeast region and the assessment of productivity and profitability of blueberry using Monte Carlo Simulation Approach. In addition, our team members at UGA analyzed end-market prospects for agricultural output and identified risk factor for integrated rice-fish in Nigeria under the USAID Feed-the-Future Innovation Lab for fish farm diversification project. Ariana Torres (Purdue) investigated how indigenous women cooperative in Peru export chocolate and passion fruits to the United States. The team also investigated how spinach, leafy green and salad mix farmers use bio controls.

At the University of Tennessee (UTN), our team member, Margarita Velandia conducted research on farmers behaviors vis-à-vis the adoption of biodegradable mulches to reduce plastic pollution associated with the use of polyethylene mulches. Furthermore, the team collected and analyzed data on the relationship between household food shopping behavior and food waste and found that online grocery shopping was associated with greater quantities of food waste overall, especially fruit and vegetable waste. Still at UTN, Margarita and team in collaboration with Tim Woods (UKy) conducted research evaluating factors influencing Tennessee and Kentucky Farmers' Willingness to Sell Produce Through Fresh Stop Markets. Chen X (UKy) in collaboration with the University of Florida, investigated the effects of shared characteristics between eco-labels: A case for organic and local food. Velandia, Rihn (UTN) collaborated with other team members like L. Palma (Texas A&M) and non-members in conducting research on overcoming the nursery industry labor shortage through a survey of strategies to adapt to a reduced workforce and automation and mechanization technology adoption.

Impact

Despite the multifaceted challenges encountered by the specialty crop growers nationally, the industry continues to grow stronger partially due to the information our team provides to the policy-makers, stakeholders and farmers. Furthermore, our team work provided information needed by the farmers for their day-to-day farm management and marketing decisions on crops to be planted, adopted agricultural practices and willingness to sell produce through fresh stop market also enhances understanding of the changing environment for farmers and informs future research needs and Extension programming across our states.

SHORT-TERM OUTCOMES

During the 2022/2023 reporting period, our group successfully made significant contributions to research, outreach, and Extension outputs covering our three main objectives. For instance, members of our group continue to provide updated farm management information to growers across the states through risk-rated enterprise budgets, marketing, trade and policy of the Specialty Crops Industry. These analysis helps farmers navigate difficult economic times and help them stay in business. Members continue to provide needed information to policymakers and general public on the impacts on the specialty crop industry, the impacts on consumers of new applications of plant breeding technologies (CRISPR applications to livestock and cranberries, irradiation use as postharvest treatments in apples), and on impact of climate change incidence on pest recurrence

(conventional and organic apples). We provided information on local foods and cut flower marketing, farmers' markets and agritourism, fact sheets and webpage on organic wheat research, including extension and outreach materials. In addition, we provided a new calculator to help growers make the connection between economic contributions to produce markets and public health initiatives, with a specific focus on the GUSNIP program and a third round of a post-COVID consumer survey.

MILESTONES

The following important milestones were achieved in providing long-term positive societal impact during this reporting period:

We were successful in securing a new USDA Regional Food Business Center grant with Oregon State, Washington State, Idaho, Wyoming and Montana State respectively. Our developed enterprise budgets were useful in providing sensitivity and financial information vis-à-vis fluctuating prices and impact on selected enterprises. Our total household food waste from grocery stores research provided policymakers additional insights into policy and programs to address food waste at home challenges. Our Covid-19 pandemic studies where the federal government allowed SNAP participant to purchase groceries online using their EBT card provided an understanding on how low-income and low-access households' value online grocery shopping and the barriers they face will be instrumental to policymakers in developing programs aimed at improving the adoption of online grocery shopping and encourage purchases of fresh fruits and vegetables. Our work was also assisted policymakers in designing policies on how fruits and vegetable farmers make decisions about the adoption of biodegradable mulches to reduce plastic pollution associated with the use of polyethylene mulches. Our research results provided information instrumental in promoting policies that would ensure public well-being, affordable healthy foods, and the long-term economic profitability of specialty crop industries including sharing results from Covid-based projects. Additionally, our group collaborated with colleagues at the USDA ERS in comparing food expenditures during COVID with estimated counterfactual expenditures in a no-COVID scenario, across outlets and channels, and throughout the different phases of the pandemic. Research on the economic implications of farm-to-school programming has resulted in two manuscripts in different stages of the peer review process, and in an outreach, webinar organized by C-FARE.

INTENDED POTENTIAL LONG-TERM OUTCOMES AND IMPACTS

The S-1088 Team members are committed to achieving long-term impacts for the benefit of society through our research, outreach, and Extension. The potential long-term outcomes and impacts are highlight by the intended by objectives/activities.

Activity

(Organized and specific functions or duties carried out by individuals or teams using the scientific method to reveal new knowledge and develop new understanding. Example: Analyze by constructing an expected profit function the likely profits to be accrued by adopting a mechanical harvester.)

On a broader scale, the members were engaged in different activities aimed at producing the following reported research, outreach and extension outputs. For instance, we successfully developed sensitivity risk-rated enterprise budgets which depicted the changes in input costs (e.g., variable costs, harvesting and marketing costs, and fixed costs) respectively and how these volatile prices affected profit margins of growers. The budgets provided information needed by the farmers for their day-to-day farm management and decisions on crops to be planted. The budgets were also needed to obtain loans and were utilized by financial institutions, farm credit bureaus, various states' Department of Agriculture and some congressional offices. Members also worked on policy issues plaguing the fruits and vegetable industry and providing solutions on how to cope during the covid-19 pandemic and trade wars with major importers like China.

We collected data from households regarding their food shopping behaviors and household food waste. The survey instrument used to measure household food waste differentiated between fruit and vegetable, protein, and starch waste and we were able to determine the relationship between household time use, food waste quantities, and the value of their food waste. We collected online and telephone survey to determine how households that are food insecure or live in limited access food environments value attributes of online grocery shopping (OGS) services. We also investigated if households' self-reported use of or barriers to using online grocery influenced their valuation of online grocery shopping attributes such as delivery speed and window, refund policy, and hypothetical programs such as a certified picker and protective produce packaging that are designed to encourage the purchasing of fruits and vegetables online. These preference online investigations were useful in quantifying different OGS attributes and suggestions for promoting more healthy eating habits and alleviating food security issues.

In addition, our group investigated promotional content such as the Pick TN Products (PTP) logo to encourage the purchasing of local goods and determine consumer consumption and responses to branding messages, including human imagery or local benefit. We also conducted a case study of wine incubators in Walla Walla, WA, and Wamego, KS. We collaborated with the Hudson Alpha Institute for Biotechnology to investigate the potential of converting carbon-neutral crops to sustainable consumer goods, building a diverse Agri-science workforce, and reviving rural economies, using causal modeling to build an economic evaluation system to evaluate the impact of potential bioproducts and consumer responses to the new sustainable products and marketing of the new products across the states. Our team also designed four online surveys to assess US consumer valuation of, and acceptance of domestically produced fresh culinary herbs. Understanding the current US marketplace aids in aligning product offerings and point-of-sale communications, which is expected to encourage the consumption of these culinary herbs.

More-so, we developed a protocol to understand how farmers perceive soil plastic pollution's impact on soil health, yield, productivity and how these perceptions translate into decisions related to the use of polythene and biodegradable mulches. To mitigate challenges related to assessing the long-term impact of soil plastic pollution and its impact on soil productivity, a

protocol to collect soil samples and information gathering from existing farms using polyethylene mulches for several years was conducted and analyzed.

SUGGESTED DRAFTED PROPOSAL FOR 2024

[Background Note – On Sunday, Nov. 12, 2023, during the annual meeting of the Multi-State Research Committee, S-1088, Specialty Crops and Food Systems: Exploring Markets, Supply Chains and Policy, the group discussed several potential avenues for collaboration among participants. The following proposal reflects one of the suggestions made during this discussion.]

Draft as of Nov. 27, 2024

Proposed Organized Symposium to be included in a Track Session for AAEA 2004 Meetings, New Orleans, LA

To be submitted jointly by the Specialty Crops Section and the BEER Section within their Track Session Proposals.

Session Title: U.S. Wine Sector Resiliency – Evaluating Responses to a Litany of Challenges: Wildfire Smoke, Pandemic Restrictions, and Climate Change

Format: Three presentations about strategies for pursuing economic resiliency of U.S. wine grape growers and wine makers; one additional speaker to serve as moderator and discussant.

Summary of Session: Looking beyond the traditional economic model of firms as units of production that combine labor and capital, this organized symposium provides examples of how a firm's and an industry's resiliency contributes to their economic viability.

Papers and Presenters:

Title: Determining Factors of Wine Industry Resiliency: A Covid-19 Case Study
Presenter: Kynda Curtis, Professor, Utah State University, kynda.curtis@usu.edu
Co-Author: Camillo Salvi, Graduate Research Assistant, Utah State University

Title: Responding to Wildfires and Smoke Exposure in California's Wine Industry through Contracting and Crop Insurance
Presenter: Jaclyn Kropp, Professor, University of Florida, jkropp@ufl.edu

Title: Strategic Agility in the Oregon Wine Industry in Response to a Cascade of Challenges and Market Shocks
Presenter: James Sterns, Oregon State University, jasterns@oregonstate.edu

Moderator/Discussant: Tim Wood, University of Kentucky, tim.woods@uky.edu

Corresponding Organizer for this proposal – James Sterns, jasterns@oregonstate.edu,
541.737.1406

OUTPUTS AND DISSEMINATION

Outreach/industry Presentations:

1. Ajani, E. K., M. Halwart, B. Omitoyin, A. Bart, O. Ajayi, X. Yuan, A. Stankus, G. Burtle, K. Kareem, **E. G. Fonsah**, B. Oduntan, G. Leramo, Y. M. Abubakar, J. C. Ikwuemesi, L. A. Argungu (2023). “Apparent Digestibility Coefficients of By-Products in Integrated Rice and Fish Farming (Rice Bran and Fish Offal Meal) Fed to the African Catfish, *Clarias Gariepinus* (Burchell, 1822) and *Oreochromis Niloticus* (Linnaeus, 1758) Juveniles”. Feed the Future Innovation Lab for Fish Final Annual Meeting, Renaissance New Orleans Pere Marquette, French Quarter Area Hotel, February 27-March 01.
2. Bonanno, A. Farm to School Programming in the US: Some Definitions, Data and Outcomes. Part of the C-FARE webinar. *Food Hubs and Farm to School: Policy and Impact Across the Food System*. October 2023
<https://www.cfare.org/items/foodhubsandfarmtoschool>
3. Bauman A. and **D. Thilmany**. GusNIP NTAE Nutrition Incentive Economic Impact Calculator. August 2023. <https://www.nutritionincentivehub.org/resources/economic-impact-calculator>. With funding and collaboration with The Nutrition Incentive Program Training, Technical Assistance, Evaluation, and Information Center (NTAE), supported by Gus Schumacher Nutrition Incentive Program from the USDA National Institute of Food and Agriculture.
4. Centinari, M., **Kelley, K. M.**, Hickey, C., Hed, B. (March 2, 2023). "Grapevine Growth Stage Dynamics Across the Commonwealth," 2023 Pennsylvania Grape and Wine Industry Conference, State College, PA, Invited.
5. Christensen, L. and **D. Thilmany**. The Northwest and Rocky Mountain Regional Food Business Center: Connecting, Strengthening, and Scaling Food Supply Chains in the Mountain and Northwest. Presentation to Colorado Economic Development Council of Colorado. June 2023. Online.
6. **Curtis, K** (2023). Organic Strawberry Growers Meeting (Adults); (December); Zoom Webinar; 15 participants
7. **Curtis, K** (2023). Food and Agritourism Opportunities (Conference, Adults); (March); Provo, UT; 36 participants
8. **Curtis, K** (2023). Organic Wheat Growers Meeting (Adults); February; Zoom Webinar; 16 participants
9. **Curtis, K** (2023). Agency Programs Utah Small and Urban Farms Conference (Workshop/Training, Adults); February; Online; 78 participants
10. **Curtis, K** (2023). Cut Flower Session Utah Small and Urban Farms Conference (Workshop/Training, Adults); February; Online; 120 participants
11. **Curtis, K** and C. Salvi (2023). Determining Factors of Wine Industry Resiliency: A Covid-19 Case Study.
12. **Fonsah, E.G.** (2023). “Economic Update: Increasing Input Prices, Supply Chain Disruptions, Global Competitiveness and Trade Policies Affecting the Vegetable Industry”. Presented at the Southeast Regional Fruits and Vegetable Conference, Savannah, GA, USA, January 07. (~100 participants).

13. **Fonsah, E.G.** (2023). “Impacts of Satsuma Citrus Production Amidst Increasing Input Costs”. Presented at the Southeast Regional Fruits and Vegetable Conference, Savannah, GA, USA, January 06. (~100 participants).
14. **Fonsah, E.G.** (2023). “Fruits and Tree Nuts Outlook” Georgia Ag-Forecast, College of Agriculture and Environmental Sciences, University of Georgia, Virtual Presentation.
15. **Fonsah, E.G.** (2023). “Vegetables and Pulses Outlook” Georgia Ag-Forecast, College of Agriculture and Environmental Sciences, University of Georgia, Virtual Presentation.
16. **Fonsah, E.G.** (2023). “Introduction to Banana Production in Georgia and the Southeast Region”, Ag Field Day & 4H Worth County High School, Sylvester, GA (Phase 1).
17. **Fonsah, E.G.** (2023). Introduction to Banana Production in Georgia and the Southeast Region”. Approved Independent ANR Extension Training, #024650, University of Georgia, Tifton, Campus (Feb 16 & 23).
18. **Fonsah, E.G.,** (2023). Building Modern Farms: Value Chain, Integration Technologies and Sustainability Model”, Agripreneurship: The Key to Africa’s Transformation. 2023 Joint Strategic Transformation and Empowerment Hybrid Conference, Watbridge Hotels and Suite, Uyo, Akwa Ibom State, Nigeria (Oct., 26).
19. **Fonsah, E.G.** (2023). “New Requirements for Crops Budgets”. UGA-ANR Vegetable Training. Tifton Campus Conference Center. ~20 participants.
20. **Fonsah, E.G.** (2023). “Introduction to Banana Production in Georgia and the Southwest Region”. Ag Field Day & 4-H Student Expo Training: The Village Community Garden, Sylvester, GA. ~150 participants.
21. **Fonsah, E.G.** (2023). “Introduction to Banana Production in Georgia and the Southwest Region”. Approved Independent ANR Extension Training # SES-024650 (Feb, 23). ~15 participants.
22. **Fonsah, E.G.** (2023). “Introduction to Banana Production in Georgia and the Southwest Region”. Approved Independent ANR Extension Training # SES-024650 (Feb, 16). ~15 participants.
23. **Gallardo, R.K.,** S.P. Galinato. 2023. “Production Costs Update for Organic Gala and Honeycrisp Apples.” Annual Meetings of the Washington Tree Fruit Association. Kennewick, WA. December 7. N. Participants =100.
24. Galinato, S.P., **R.K. Gallardo.** 2023. “Overview of the Updated Fresh-Market Pear Enterprise Budgets: Anjou and Bartlett.” Annual Meetings of the Washington Tree Fruit Association. Kennewick, WA. December 6. N. Participants =80.
25. **Gallardo, R.K.,** D. Charlton, S. Devadoss, J. Luckstead, and S. Vougioukas. 2023. “Economic Viability of Robotic Fruit Harvesters to Reduce Large Seasonal Labor Demands.” Annual Meetings of the Washington Tree Fruit Association. Kennewick, WA. December 5. N. Participants =120.
26. **Gallardo, R.K.,** S.P. Galinato. “Sweet Cherry Cost of Production Updates.”
 - a. 2023 Cherry Institute. January 13. N. Participants= 100.
27. **Gallardo, R.K.** 2023. “How Much does it Cost to Prevent Sweet Cherries Western X-En Español.”
 - a. Wilbur Ellis Grower Conference. January 13. N. Participants=45.
28. **Gallardo, R.K.** 2023. “Consumers’ Acceptance of Gene-Edited Table Grapes.” Presentation at the Virtual Workshop Harnessing Genome Editing Technologies for Viticulture.” Organized by the Agriculture and Food Systems Institute, USDA. May 29. N. Participants=70.

29. Gill, M., **D. Thilmany** and L. Christensen. 2023. Consumers' Online Shopping: What Drives Online Usage in Various Market Channels. Local Food System Response to COVID Series CFI-2.06. January 2023.
<https://lfscovid.localfoodeconomics.com/consumer-food-insights/>
30. Halwart, M., O. Ajayi, X. Yuan, A. Stankus, E. K. Ajani, B. O. Omitoyin, A. Bart, **E. G. Fonsah**, G. Burtle, K. Kareem, B. Oduntan, Y.M. Abubakar, N. Innes-Taylor, C. Sirimanotham, K. Li, J. Li, J. C. Ikwuemesi, L. A. Argungu, T. Ogunkoya, J. I. Fasakin (2023). "Can the Diversification of Rice Farming with Fish Support Communities and Countries in Achieving the Sustainable Development Goals? Insights from Nigeria, Lao PDR and P.R. China. Feed the Future Innovation Lab for Fish Final Annual Meeting, Renaissance New Orleans Pere Marquette, French Quarter Area Hotel, Feb. 27-March 01.
31. Jones, K. and **D. Thilmany**. RFPs, IDCs, and SOWs. Navigating (and Flourishing in) the Complex World of Grant Writing, Reporting and Project Management. Presentation to the 2023 CSU Ag Extension Forum. Fort Collins CO. September 2023.
32. **Kelley, K. M.** (2023). "The Beverage Update." All in FoodZ Podcast Series, Food Decisions Research Laboratory, School of Hospitality Management, Penn State. (Podcast)
33. **Kelley, K. M.** (November 8, 2023). "Using emotion to connect with wine consumers," Southeastern United Grape & Wine Symposium, Surry Community College, Dobson, NC, 120 in attendance, Invited. State. Keynote.
34. **Kelley, K. M.** (August 11, 2023). "2023 Alcohol Consumption and Purchasing Trends," Pennsylvania Liquor Control Board Alcohol Education Conference, Pennsylvania Liquor Control Board, Harrisburg, PA, 160 in attendance, Invited. State. Keynote.
35. **Kelley, K. M., Govindsamy, R.,** Albano, D., Falcone, L., Kelly, M., Schmidt, C., Sharma, A., Li, J., Gomez, M. (November 13, 2023). "Connecting with Pennsylvania winery tasting rooms to understand the current challenges to winery tasting room owners and operators," Food Distribution Research Society, Annual Meeting, Washington, D.C. National.
36. **Kelley, K. M.** (August 14, 2023). "Wine Marketing and E-commerce," Rutgers Grape and Wine Science Certification Program, Rutgers, New Brunswick, NJ, 15 in attendance, Invited. State.
37. **Kelley, K. M.,** Schmidt, C. (March 13, 2023). "Wine consumer and tasting room research update," 2023 Pennsylvania Winery Association Annual Business Meeting, Lancaster, PA, Invited.
38. **Kelley, K. M.** (June 1, 2023). "Using emotion to engage and build a connection with your customers," Winery Tasting Room Training, Penn State Extension, Mifflinburg, PA, 25 in attendance, Invited. Regional.
39. **Kelley, K. M.** (March 30, 2023). "Using emotion to engage and build a connection with your customers," Winery Tasting Room Training, Penn State Extension, State College, PA, 88 in attendance, Invited. Regional.
40. **Kelley, K. M.,** Schmidt, C. (February 1, 2023). "Food Trends 2023," Mid-Atlantic Fruit and Vegetable Convention, Hershey, PA, 100 in attendance, Invited. Regional.
41. Omitoyin, B. O., M. Halwart, E. K. Ajani, A. Bart, O. Ajayi, X. Yuan, A. Stankus, G. Burtle, K. Kareem, **E. G. Fonsah**, B. Oduntan, O. O. Taiwo, Y. M. Abubakar, J. C. Ikwuemesi and L. A. Argungu (2023). "Assessment of Water Utilization, Water Quality and Nutrient in Integrated Rice-Fish Farming. Feed the Future Innovation Lab for Fish

- Final Annual Meeting, Renaissance New Orleans Pere Marquette, French Quarter Area Hotel, February 27-March 01.
42. Parks, C., A. Bauman and **D. Thilmany**. GusNIP NTAE Nutrition Incentive Economic Impact Calculator Webinar. Hosted by the Gretchen Swanson Center. August 2023. Posted at: <https://www.nutritionincentivehub.org/resources/economic-impact-calculator>
 43. Ross, C., A. Colonna, R.K. Gallardo, M.L. Montero. "Pear Consumer Preference Testing."
 - a. Presentation at the Pear Day-North Central Washington Tree Fruit Days. January 19, 2023. N. participants=120 online, 99 in-person.
 44. Schmidt, C., **Kelley, K. M.**, Centinari, M., Hickey, C., Leach, H. (March 2, 2023). "Gauging the Economic Impact of Spotted Lanternfly for Grape Growers & Wineries," 2023 Pennsylvania Grape and Wine Industry Conference, State College, PA, Invited.
 45. Sullins, M. and **D. Thilmany** (2023). Overview of strategic marketing: consumer trends, differentiation and choosing your markets. Presentation to the 2023 Colorado Beginning Farmers Program. January 2023. Online
 46. **Thilmany, D.** (2023). Market Data: How to use Data in your Marketing Strategy. Colorado Proud Webinar Series. <https://ag.colorado.gov/markets/colorado-proud>. August 2023
 47. **Thilmany, D.** (2023). How to Connect with The Northwest and Rocky Mountain Regional Food Business Center: WEC Meeting at 2023 WAEA/CAES Annual Meeting. Virtual presentation. July 2023
 48. **Thilmany, D.** (2023). Developing a Great Marketing Plan and How to Implement it! Colorado Proud Webinar Series. <https://ag.colorado.gov/markets/colorado-proud>. June.
 49. **Thilmany, D.**, T. Lipetzky and J. Cable (2023). Key Finding from the 2022 Public Perceptions & Attitudes About Colorado Agriculture Survey. Presentation to the CSU President's Ag Advisory Council. Ma 2023. Fort Collins CO.
 50. **Thilmany, D.** and M. Sullins (2023). Overview of the 2022 Colo Public Attitudes Survey. Presentation to the High Plains Intermountain Center for Agricultural Health and Safety Team. Online. May 2023.
 51. **Thilmany, D.**, M. Sullins and J. Cable. (2022) Colorado Public Attitudes Survey: Exploring Trends Important to Specialty Crops and Local Markets. Colorado Fruit and Vegetable Growers Association webinar. March 2023. Posted at: <https://www.youtube.com/watch?v=bET-BTd1Bys>
 52. **Thilmany, D.** Building Colorado's Food Policy. Panel at the Colorado Ag Outlook Forum, February 2023. Westminster, CO.
 53. **Thilmany, D.** (2023). Exploring the Dynamics of Colorado's Ag and Food Producers and Industry. Presentation to the Colorado Young Farmer and Rancher Leadership Conference. What's Next? Who's Next? February 2023. Fort Collins CO.
 54. **Thilmany, D.** Budgets as a Tool for Decision Making: Tools and Strategies to help you measure financial aspects of your farm/ranch. Presentation to the 2023 Colorado Beginning Farmers Program. February 2023. Online

Theses and Dissertation Completed/Supervised/Examined:

1. Essilfie Felix Larry (2023). Rice Varietal Seed Technology Adoption on Improving Productivity and Household Welfare, Northern Region, Ghana. Unpublished PhD

- Dissertation, University of Ghana, Legon-Accra, Ghana, West Africa. **Fonsah, E.G. (External Examiner).**
2. Iddrisu Saani Nassam (2023). Demand for and Profitability of Investing in Processed Mushrooms in Ghana. Unpublished PhD Dissertation, University of Ghana, Legon-Accra, Ghana, West Africa. **Fonsah, E.G. (External Examiner).**
 3. Issah Mohammed Amin Kurli (2023). Impact of Integrated Soil Fertility Management on the Welfare of Maize Farm Households in the Kumbungu District. Unpublished Master's Thesis, University of Ghana, Legon-Accra, Ghana, West Africa. **Fonsah, E.G. (External Examiner).**
 4. Manandhar, Grishma, 2023. "Autonomous Agent-Based Electricity Trading in a Grid-Connected Microgrid." Ph.D. Dissertation in Economics, Washington State University supervised by **Gallardo, R.K (Supervisor).**
 5. Papa Kofi Arhin (2023). Farmers' Willingness to Pay for Forest Ecosystem Conservation in Ahanta West District of Ghana. Unpublished Master's Thesis, University of Ghana, Legon-Accra, Ghana, West Africa. **Fonsah, E.G. (External Examiner).**

STATE, STATION, OR AGENCY PRESENTATIONS (S-1088 MEMBERS IN BOLD)

1. Ajani, E. K., M. Halwart, B. Omitoyin, A. Bart, O. Ajayi, X. Yuan, A. Stankus, G. Burtle, K. Kareem, **E. G. Fonsah**, B. Oduntan, G. Leramo, Y. M. Abubakar, J. C. Ikwuemesi, L. A. Argungu (2023). "Apparent Digestibility Coefficients of By-Products in Integrated Rice and Fish Farming (Rice Bran and Fish Offal Meal) Fed to the African Catfish, *Clarias Gariepinus* (Burchell, 1822) and *Oreochromis Niloticus* (Linnaeus, 1758) Juveniles". Feed the Future Innovation Lab for Fish Final Annual Meeting, Renaissance New Orleans Pere Marquette, French Quarter Area Hotel, February 27-March 01.
2. Baker, Q., P. Canning, S. Rehkamp, M. Gill, A. Bonanno, and **D. Thilmany**. Assessing Impacts of COVID-19 Pandemic on the U.S. Macro Food Economy: February 2020 to December 2021. Presentation to 2023 ASTAR workshop. USDA Economic Research Service. Washington DC. July 2023.
3. Bumgarner, N., D. Lockwood, **A.L. Rihn** (2023). Integrating Sensory Evaluations in Cultivar Selection for Small-scale Small Fruit Growers. ASHS Annual Conference, Orlando, FL, July 31 - Aug. 4, 2023.
4. Byrne, A., K. Marchesi, M. Gill, E.M Pelli, W. Sinclair, K. Harris-Lagoudakis and **D. Thilmany**. The New Era of Food: Short- and Long-term Changes in the Food System After COVID-19. Organized Symposia selected for the 2023 AAEE Annual Meetings. Washington DC, July 2023.
5. **Curtis, K.** (2023). "Role of Women in the Drink Tourism Industry and Associated Impacts on Rural Economic Development." Selected presentation at the National Extension Tourism Network Annual Meeting, Milwaukee, WI, September.
6. **Curtis, K.,** (2022) and M. Stock, "Growing a New Cut Flower Industry: Market Needs & Preferences." Selected paper presented at the Food Distribution Research Society Annual

- Meeting, Pensacola, FL, October.
7. Drugova, T., and **K. Curtis**, (2022). “The Impact of Taste Beliefs on Consumer Perceptions of Organic Specialty Bakery Products.” Selected paper presented at the Food Distribution Research Society Annual Meeting, Pensacola, FL, October 2022.
 8. **Fonsah, E.G.** (2023). “Economic Update: Increasing Input Prices, Supply Chain Disruptions, Global Competitiveness and Trade Policies Affecting the Vegetable Industry”. Presented at the Southeast Regional Fruits and Vegetable Conference, Savannah, GA, USA, January 07. (~100 participants).
 9. **Fonsah, E.G.** (2023). “Impacts of Satsuma Citrus Production Amidst Increasing Input Costs”. Presented at the Southeast Regional Fruits and Vegetable Conference, Savannah, GA, USA, January 06. (~100 participants).
 10. **Fonsah, E.G.**, (2023). Building Modern Farms: Value Chain, Integration Technologies and Sustainability Model”, Agripreneurship: The Key to Africa’s Transformation. 2023 Joint Strategic Transformation and Empowerment Hybrid Conference, Watbridge Hotels and Suite, Uyo, Akwa Ibom State, Nigeria (Oct., 26).
 11. **Fonsah, E.G.**, (2023). “Agricultural Community Models”, Panel Discussion: The Key to Africa’s Transformation. 2023 Joint Strategic Transformation and Empowerment Hybrid Conference, Watbridge Hotels and Suite, Uyo, Akwa Ibom State, Nigeria (Oct., 26) ~ 100 participants.
 12. Gerloff, S., **A.L. Rihn**. (2023). Consumer Preferences for Flatheaded Borer Control Measures in Maple Trees, Blueberry Bushes, Apples, and Blueberries. Flatheaded Borer Multistate Extension Agent Training. March 30, 2023, virtual.
 13. Gill, M., A. Bonanno, and **D. Thilmany**. How did pandemic-era shift in consumer expenditures vary across retailer types? Evidence from counterfactual COVID-19 scenarios. Paper for Organized Symposia Supply Chain Resilience in the Agri-Food Sector. Organized by J. Hobbs. 2023 Joint CAES/SCAE-WAEA Annual Meeting. Whistler BC, July 2023.
 14. **Govindasamy, R.**, Bayramoglu, Z., Aziz, S., Soysal, U., and Vellangany, I. (November 13, 2023). " Analysis of Factors Affecting Local Fresh Fruit and Vegetable Purchases," Food Distribution Research Society, Annual Meeting, Washington, D.C. National.
 15. Halwart, M., O. Ajayi, X. Yuan, A. Stankus, E. K. Ajani, B. O. Omitoyin, A. Bart, **E. G. Fonsah, E. G.** Burtle, K. Kareem, B. Oduntan, Y.M. Abubakar, N. Innes-Taylor, C. Sirimanotham, K. Li, J. Li, J. C. Ikwuemesi, L. A. Argungu, T. Ogunkoya, J. I. Fasakin (2023). “Can the Diversification of Rice Farming with Fish Support Communities and Countries in Achieving the Sustainable Development Goals? Insights from Nigeria, Lao PDR and P.R. China. Feed the Future Innovation Lab for Fish Final Annual Meeting, Renaissance New Orleans Pere Marquette, French Quarter Area Hotel, Feb. 27-March 01.
 16. Kelley, K. M., **Govindasamy, R.**, Albano, D., Falcone, L., Kelly, M., Schmidt, C., Sharma, A., Li, J., & Gomez, M. (November 13, 2023). "Connecting with Pennsylvania winery tasting rooms to understand the current challenges to winery tasting room owners and operators," Food Distribution Research Society, Annual Meeting, Washington, D.C. National.
 17. Pope, J.I., S.R. Givens, S.P. Armstrong, **A. Rihn**, N. Bumgarner, K.J. Walters. 2023. Light Intensity Affects Biomass and Anthocyanin Accumulation in Microgreens. University of Tennessee Discovery Day, Knoxville, TN, September 12, 2023. Poster.
 18. **Rihn, A.L.**, K. Walters, N. Bumgarner. 2023. Tennesseans Preferences for Locally Grown Microgreens. ASHS Annual Conference, Orlando, FL, July 31 - Aug. 4, 2023.

19. **Rihn, A.L.** 2023. Consumer Preferences for Farmers Markets. Tennessee Farmers Market Bootcamp, virtual, January 31, 2023.
20. **Rihn, A.L.**, D.W. Hughes, & K. Jensen. 2023. Consumer Perceptions of Tennessee Wine. Pick Tennessee Conference, Franklin, TN, February 17, 2023.
21. **Rihn, A.L.** 2023. Economic Update: State of the Green Industry. UTIA Green Industry Field Day, July 27, 2023, Knoxville, TN.
22. **Thilmany, D.** (presenting on behalf of USDA AMS COVID team). Diversifying Market Channels: Changing Priorities for Food Consumers and Policymakers. Keynote to the Extension Risk Management Education annual meetings. Chicago IL. March 2023.
23. **Torres, A.P.** (2023). Market Opportunities for Small Grains. AAEA Annual Meeting, Washington, DC.
24. **Torres, A.P.** (2023). The Use of Social Media by the US Green Industry. IFAMA, New Zealand.
25. **Torres, A.P.** (2023). Top Social Media Strategies for Smaller Farms. Purdue Food Safety Webinar Series.
26. **Torres, A.P.** (2023). #Diverse Corn Belt: Enhancing Rural Resilience Through Landscape Diversity. Purdue Horticulture and Landscape Architecture Department, West Lafayette, IN
27. **Torres, A.P.** (2023). What to Expect in 2023? Main Trends in Agriculture. Indiana Green Expo. Indianapolis, IN
28. **Torres, A.P.** (2023). Emerging Customer and Industry Trends in a Post COVID-19 World. Indiana Horticultural Congress. Indianapolis, IN
29. **Torres, A.P.** (2023). The Economics of State-Branded Foods. Indiana Grown Webinar
30. **Torres, A.P.** (2023). Results from the Purdue Mint Grower Survey. Purdue IPM Webinar Series.
31. **Torres, A.P.** (2023). Hort-Calculator: A Tool to Make Sense of Investments. Indiana Small Farm Conference. Indianapolis, IN.
32. Ulloa MC, **Torres, A.P.** (2023). Profiling the US Market for Salad Mixes. IFAMA, New Zealand.
33. **Velandia, M.** and **A. Rihn.** (2023). Factors Correlated with the Propensity to Use Automation. The Human Side of Technology Adoption in Tree Crops: Research and Producer Perspectives session. 2023 AI in Agriculture: Innovation and Discovery to Equitably Meet Producers Needs and Perceptions. Orlando, FL; April 17-19, 2023.

STATE, STATION, OR AGENCY PUBLICATIONS (S-1088 MEMBERS IN BOLD)

1. **Curtis, K.** and N. Chin (2023). Building Diversity, Equity, Access, and Inclusion in Tourism Outreach. NET Publication. Online at: <https://extensiontourism.net/building-diversity-equity-access-and-inclusion-deai-in-tourism-outreach/>
2. **Fonsah, E. G.**, S.R. Kunwar, R. Allen, J. Jacobs and S. Curry (2023). “Southern High Bush Blueberry Enterprise Budget” *Department of Ag & Applied Economics, University of Georgia.* <http://agecon.uga.edu/extension/budgets.html>
3. **Fonsah, E. G.**, L. Wells, W. Hudson and D. Collins (2023). “Pecan Enterprise Budget” *Department of Ag & Applied Economics, University of Georgia.*

4. **Fonsah, E. G.,** J. Price and B. Cantrell (2023). “Satsuma – 50/50 Fresh/Processed Enterprise Budget” *Department of Ag & Applied Economics, University of Georgia.* <http://agecon.uga.edu/extension/budgets.html>
5. **Fonsah, E.G.,** J. Shealey, J. Kichler and S. Carlson (2023). “Bell pepper Enterprise Budget”. *Department of Ag & Applied Economics, University of Georgia.* <http://agecon.uga.edu/extension/budgets.html>
6. **Fonsah, E. G.** and C. Tyson (2023). “Onions Enterprise Budget” *Department of Ag & Applied Economics, University of Georgia.* <http://agecon.uga.edu/extension/budgets.html>
7. **Fonsah, E.G.,** and J. Shealey (2023). “Squash- Double Cropped Enterprise Budget”. *Department of Ag & Applied Economics, University of Georgia.* <http://agecon.uga.edu/extension/budgets.html>
8. **Fonsah, E.G.,** and J. Shealey (2023). “Squash – Bare Ground Enterprise Budget”. *Department of Ag & Applied Economics, University of Georgia.* <http://agecon.uga.edu/extension/budgets.html>
9. **Fonsah, E.G.,** and J. Shealey (2023). “Sweet Corn Enterprise Budget in Georgia” *Department of Ag & Applied Economics, University of Georgia.* <http://agecon.uga.edu/extension/budgets.html>
10. Fulcher, A., **A. L. Rihn,** L. A. Warner, A. V. LeBude, **M. Velandia,** N. R. Bumgarner, and S. M. Schexnayder. 2023. The Role of Automation in Addressing the Nursery Industry Labor Shortage, Part I: Current Automation Adoption. UT Extension Publication, W1147 (Collaboration with University of Florida and North Carolina State University).
11. Fulcher, A., **A.L. Rihn,** L.A. Warner, A.V. LeBude, **M. Velandia,** N. Bumgarner, and S. Schexnayder. 2023. From Chasing to Solving Labor Scarcity, Part I: Current Automation Adoption by the US Nursery Industry. Tennessee Green Times. 24(1):10-15.
12. Fulcher, A., **A.L. Rihn,** L.A. Warner, A.V. LeBude, **M. Velandia,** N. Bumgarner, and S. Schexnayder. 2023. From Chasing to Solving Labor Scarcity, Part II: Advances in Automation within Tasks for Field Production. Tennessee Green Times. 24(2):18-22.
13. **Gallardo, R.K.,** S. Galinato, and G. Hoheisel. “2022 Cost Estimates of Establishing and Producing Organic “Duke” Blueberries in Eastern Washington” – Washington State University Extension Bulletin TB28E, November 2023.
14. **Gallardo, R.K.,** S. Galinato, and G. Hoheisel. “2022 Cost Estimates of Establishing and Producing Organic “Elliot” Blueberries in Eastern Washington” – Washington State University Extension Bulletin TB96E, November 2023.
15. **Gallardo, R.K.,** S. Galinato, and C. Benedict. “2022 Cost Estimates of Producing and Packing Conventional “Duke” Blueberries in Western Washington” – Washington State University Extension Bulletin TB94E, October 2023.
16. **Gallardo, R.K.,** S. Galinato, and C. Benedict. “2022 Cost Estimates of Producing and Packing Conventional “Draper” Blueberries in Western Washington” – Washington State University Extension Bulletin TB93E, September 2023.
17. **Gallardo, R.K.** and S. Galinato. “2022 Cost Estimates of Producing and Packing Organic Honeycrisp Apples in Washington” – Washington State University Extension Bulletin TB91E, May 2023.
18. **Gallardo, R.K.** and S. Galinato. “2022 Cost Estimates of Producing and Packing Organic Gala Apples in Washington” – Washington State University Extension Bulletin TB19E, May 2023.
19. **Kelley, K. M., & Schmidt, C.** (2023). "Impact of the Pandemic on Wine Consumption

- and Winery Visitation Trends - Part 4." Penn State Extension.
20. **Kelley, K. M.** (2023). "Using Emotion to Engage Alcoholic Beverage Consumers." Penn State Extension.
 21. **Kelley, K. M.,** & Schmidt, C. (2023). "Impact of the Pandemic on Wine Consumption and Winery Visitation Trends - Part 3." Penn State Extension.
 22. **Kelley, K. M.,** & Schmidt, C. (2023). "Impact of the Pandemic on Wine Consumption and Winery Visitation Trends - Part 2." Penn State Extension.
 23. **Kelley, K. M.,** & Schmidt, C. (2023). "Impact of the Pandemic on Wine Consumption and Winery Visitation Trends." Penn State Extension.
 24. **Kelley, K. M.** (2023). "Winery Tasting Room Customer Journey Mapping." Penn State Extension.
 25. **Kelley, K. M.** (2023). "Alcoholic Beverage Consumption Statistics and Trends 2023." Penn State Extension.
 26. **Kelley, K. M.,** & Schmidt, C. (2023). "Food Trends 2023." Penn State Extension. *ste Ratings? USU Extension Fact Sheet, Applied Economics/2023-03pr.*
 27. **Rihn, A.L.,** M. Knuth, B.K. Behe, and C.R. Hall. Marketing Plants to Engage the Conscientious Consumer. *Green Profits*. March 2023. <https://www.greenprofit.com/Article/?articleid=26191>
 28. **Rihn, A.** (2023). The Benefits of Marketing Food-Producing Plants as Local. *E-GRO Alert*, Vol. 8, No. 8. 4/21/2023. <https://www.e-gro.org/pdf/E808.pdf>
 29. **Rihn, A.,** and A. Fulcher. 2022. Employment in the Green Industry: A Labor of Love. *Tennessee Green Times*. 12(3): 16-18.
 30. **Rihn, A.** (2023). "The Eye Eats Before the Mouth, but What Attracts Customers?" *e-GRO Blog* post on 10/26/2023. <https://www.egroblog.com/showblog.php?ID=211>

REFEREED JOURNAL ARTICLES (S-1088 MEMBERS IN BOLD)

1. Bimbo, F., **A Bonanno,** R Viscecchia (2023). Geographical indications' prices and marketing margins: the role of group size, longevity and production decisions *British Food Journal* 125 (1), 286-301
2. Bonanno, A., M. Gill and **D. Thilmany.** Was it Real? Decomposing Pandemic U.S. Food Expenditures Changes Using Counterfactuals. Working paper to be submitted to the *Journal of the Ag and Applied Economics Association*.
3. Brumfield, R., D. Greenwood, M. Flahive DiNardo, A.J. Both, J. R. Heckman, **R. Govindasamy,** N. Polanin, A.A. Rouff, A. Rowe, R. VanVranken, and S. Arumugam. A Risk Management Training Program Designed to Empower Urban Women Farmers. (2023), *HortScience*: 1291–1296. <https://doi.org/10.21273/HORTSCI17305-23>
4. Badruddoza, S., Amin, M.D. and **McCluskey, J.,** (2023). "Impact of Food Retailers' Presence and Composition on Nutritional Equity and Health Outcomes in the United States with Machine Learning". *Journal of Nutrition Education and Behavior*, 55(7), pp.108-109.
5. Cariou, P. R.A. Halim, and B.J. Rickard. (2023). Ship-owner response to carbon taxes: Industry and environmental implications. *Ecological Economics* 212(October), Article 107917. Available at: <https://doi.org/10.1016/j.ecolecon.2023.107917>

6. Chen, J., Lai, J., **Chen, X.**, & Gao, Z. (2023). "Effects of Shared Characteristics between Eco-labels: A Case for Organic and Local Food." *International Journal of Consumer Studies*, 47(1), 285-298. (Collaboration with the University of Florida). DOI: <https://doi.org/10.1111/ijcs.12835>
7. Denton, R., **M. Velandia**, **J. N. Yenerall**, K. L. DeLong, C. Trejo-Pech, **X. Chen**, K. Tanaka, K. Rignall, and S. M. Schexnayder. 2023. "Evaluating Factors Influencing Tennessee and Kentucky Farmers' Willingness to Sell Produce Through Fresh Stop Markets." *Frontiers in Sustainable Food Systems*, 7:1212764. (Collaboration with the University of Kentucky).
8. Drugova, T., and **K. Curtis** (2023). Who Values Organic Specialty Bakery Products? USU Extension Fact Sheet, Applied Economics/2023-01pr.
9. Drugova, T., and **K. Curtis** (2023). Consumer Taste Beliefs Impact Organic Specialty Baked Good Pricing. USU Extension Fact Sheet, Applied Economics/2023-02pr.
10. Drugova, T., and **K. Curtis** (2023). Which Factors Influence Consumer Organic Specialty Bakery Product Taste Ratings? USU Extension Fact Sheet, Applied Economics/2023-03pr.
11. Fulcher, **A.**, **Rihn**, A. L., Warner, L. A., LeBude, A. V., Schexnayder, S., Altland, J. E., Bumgarner, N., Marble, S. C., Nackley, L., Palma, **M.**, **Velandia**, M., Zhu, H., Gan, H., & Owen, J. S. (2023). "Overcoming the Nursery Industry Labor Shortage: A Survey of Strategies to Adapt to a Reduced Workforce and Automation and Mechanization Technology Adoption Levels." *HortScience*, 58(12), 1513-1525.
12. **Huang, K.-M.**, Guan, Z., Blare, T., Hammami, A. Malek (2023). Global Avocado Boom. *Choices*, 38(4). <https://www.choicesmagazine.org/choices-magazine/submitted-articles/global-avocado-boom>
13. **Fonsah, E.G.**, S.R. Kunwar and J. Price (2023). Economics of Citrus Production Using Modern Technology (under review)
14. **Fonsah, E.G.**, R.K. Kunwar, J.C. Diaz-Perez (2023). Economic Evaluation of Bell Pepper Production Under Colored Shade Nets System in the Southeast Region of the USA, *African Journal of Agricultural Economics and Rural Development*, ISSN: 2375-0693; Vol. 11(1), pp. 001-007 (January)
15. **Fonsah E.G.**, J. F. Idowu, Halwart, M., X. Yuan, E.K. Ajani, B.O. Omitoyin, A. Bart, G. Burtle and O. Ajayi (2023). "Analyzing End-Market Prospect for Agricultural Output and Identifying Risk Factor: Integrated Rice-Fish in Nigeria". Feed-the-Future Innovation Lab for Fish Farm Diversification, The U.S. Government's Global Hunger & Food Security Initiative, *Technical Report-Socio-economic Contribution*, pp.1-10.
16. **Gallardo, R.K.** A Review of Agriculture's Environmental Impacts and Adaptation Strategies. Forthcoming. *International Review of Environmental and Resource Economics*.
17. **Gallardo, R.K.**, X. Ma, A.E. Colonna, M.L. Montero, and C.F. Ross. 2023. Consumers' Preferences for Novel and Traditional Pear Varieties: Evidence from Sensory Evaluation and Willingness to Pay Elicitation. *HortScience* 58(12): 1474-1483. <https://doi.org/10.21273/HORTSCI17317-23>
18. **Govindasamy, R.**, A. Ayeni, K.M. Kelley, J.E. Simon, W.J. Sciarappa, R.W. Van Vranken, P. Nitzsche, B. Schilling, S.J. Komar, and S. Arumugam. Ethnic Crop Consumption and Marketing in the Eastern United States: Trends and Prospects, *Mediterranean Agricultural Sciences*. (2022). 35(3) 155-165.

19. Halwart, M., X. Yuan, E.K. Ajani, B.O. Omitoyin, A. Bart, **E.G. Fonsah**, G. Burtle and O. Ajayi (2023). “New Development Frontier: Unlocking the Potential of Rice Field Fisheries (RFF) in Nigeria”. Feed-the-Future Innovation Lab for Fish, The U.S. Government’s Global Hunger & Food Security Initiative, *Policy Brief 4:2023*
20. Hill, R., **B.B.R. Jablonski**, L. Van, M. Wang, P. Mallika Appuhamilage, M. LeRoux, T. Mark, D.F. Mooney, **D. Thilmany**. (2023). Producers Marketing a Novel Crop: A Field-Level View of Hemp Market Channels. *Renewable Ag and Food Systems*. 38, e22, 15. <https://doi.org/10.1017/S1742170523000145>
21. Knuth, M., **Rihn, A.L., Torres, A.P.**, Behe, B.K., Boyer, C., and Khachatryan, H. *In Press*. Social Media Usage Among Green Industry Firms. *Journal of Environmental Horticulture*.
22. Kunwar, S. R., **E. G. Fonsah**, and C. Escalante (2023). “An Assessment of Productivity and Profitability Using Monte Carlo Simulation Approach: A Case of Georgia Blueberry Industry” (Under review)
23. Langford, M., **K. Curtis**, and M. Stock (2023). An Overview of the Cut Flower Industry. USU Extension Fact Sheet, Applied Economics/2023-05pr.
24. Langford, M., **K. Curtis**, and M. Stock (2023). Cut Flower Markets and Marketing in the Intermountain West. USU Extension Fact Sheet, Applied Economics/2023-06pr.
25. Langford, M., **K. Curtis**, and M. Stock (2023). Understanding Cut Flower Consumers. USU Extension Fact Sheet, Applied Economics/2023-07pr.
26. Lim, H., **R.K. Gallardo**, and M.P. Brady. 2023. “Interactions Between Organic and Conventional Markets from Pest and Disease Outbreaks: The Case of the U.S. Apple Industry.” *Journal of Agricultural and Applied Economics*, 1-17. <https://doi.org/10.1017/aae.2023.11>
27. Love, E., **B.B.R. Jablonski**, L. Bellows and **D. Thilmany** A Baseline Assessment of School Food Spending and Local Procurement: Exploring the Case of Colorado Farm to School State Incentive and Other Public Policies. In second review at Agricultural and Resource Economics Review.
28. Love, E. and **D. Thilmany**. (2023). Price Transmission and Asymmetry in the Colorado Potato Supply Chain. *Journal of Food Distribution Research*. Vol. 33. https://www.fdrsinc.org/wp-content/uploads/2023/02/JFDR53.3_1_Love.pdf
29. Ma, X., **R.K. Gallardo**, E. Canales, A. Atucha, J. Zalapa, and M. Iorizzo. (2023). Would Consumers Accept CRISPR Fruit Crops if the Benefit Has Health Implications? An Application to Cranberry Products. Forthcoming. *Agricultural and Resource Economics Review*.
30. Marques, JR., Rosales, C., Ulloa, M.C., **Torres, A.P.**, Karam, A.A., and Mohammed, R. Submitted. Olive Market Analysis in Nineveh Plains, Iraq. USAID Publication.
31. Mendis S, **A. Bonanno**, and C. Cho. Forthcoming “Farm to School Programming Spillovers and Households' Fruits and Vegetables Purchases.” *Journal of the Agricultural and Applied Economics Association*.
32. Montero, M.L., A.E. Colonna, **R.K. Gallardo**, and C.F. Ross. Sensory Profiling of Pears from the Pacific Northwest: Consumers’ Perspective and Descriptive Analysis. Forthcoming. *Journal of Food Science*.
33. Ostadijafari, M., G. Manandhar, A. Dubey, H. A. Love and O. Bergland, (2023), "Principal-Agent Model for Bilateral Contract Design to Incentivize Residential Demand-side Flexibility," in *IEEE Transactions on Energy Markets, Policy and Regulation*, doi: 10.1109/TEMPR.2023.3304559.

34. Ozkan, B., A.K. Dube., and **R. Govindasamy**, “Market Outlet Choices and their Effects on the Welfare of Smallholder Vegetable and Fruit Producers in Ethiopia”, *Horticulturae*, 2022. <https://www.mdpi.com/2311-7524/8/12/1148>
35. Palardy*, N., M. Costanigro, J. Cannon, **D. Thilmany**, J. Berning, J. Bayham, and J. Callaway. 2023. “Beer sales in grocery and convenience stores: a glass half-full for craft brewers?” *Regional Studies* 57(10):1981–1994. <https://doi.org/10.1080/00343404.2023.2166914>
36. Philocles, S., **Torres, A. P.**, Patton, A.J., and E. Watkins. 2023. The Adoption of Low-Input Turfgrasses in the Midwestern US: The Case of Fine Fescues and Tall Fescue. *Horticulturae*.
37. Rickard, B.J., S.-T. Ho, F. Livat, and A. Okrent. 2023. Date labels, food waste, and supply chain implications. *European Review of Agricultural Economics* 50(1): 29-58.
38. Rignall, K., K. Tanaka, **M. Velandia**, C. Trejo-Pech, A. Del Brocco, N. Messer, and T. Cuellar. 2023. “The Practice of Food Justice: How Food Hubs Negotiate Racial Justice in the Southeastern United States.” *Culture, Agriculture, Food and Environment*. (Collaboration with the University of Kentucky).
39. **Rihn L.A., Torres A.P.**, Behe B.K., Barton S. Submitted. Unwrapping the Native Plant Black Box: Consumer Perceptions and Segments for Target Marketing Strategies. *American Journal of Agricultural Economics*.
40. **Rihn, A.**, Behe, B.K., Barton, S. and **Torres, A.P.**, 2023. Greater Appeal of Native Plants for Environmentally Conscious Consumers. *Journal of Environmental Horticulture*, 41(1):7-13.
41. Rodriguez, O.F. and **Torres, A.P.**, Thompson, A.W., and Marshall, M.I., (2023). Market Access and Value-added Strategies in the Specialty Crops Industry. *HortScience*, 58(1):32-39.
42. **Torres, A.P., Rihn, A.L.**, Barton, S.S., and Behe, B.K. Submitted. Perceptions and Socio-Economic Status Influence Purchases of Native Plants. *HortTechnology*.
43. **Staples, A.J.**, Howard, P., Connor, D.S., Sirrine, J.R., Ostrom, M.R., & Miller, M. (2023). “Apples to Advocacy: Evaluating Consumer Preferences for Hard Cider Policies.” *Journal of Wine Economics*, 1-16. <https://doi.org/10.1017/jwe.2023.29>
44. Traldi R, **Torres, A.P.** Submitted. It’s all about the economics: Navigating the challenges and opportunities of agricultural diversification in the U.S. Corn Belt. *Agriculture and Human Values*.
45. Trejo-Pech, C., **M. Velandia**, K. Tanaka, K. Rignall, and T. Billie. (2023). “Financial and Strategic Management Analysis of Farmer Food share Inc., a Nonprofit Food Organization.” *International Food and Agribusiness Management Review*. (Collaboration with the University of Kentucky).
46. Uddin, A., **R.K. Gallardo**, B. Rickard, J.A. Alston, and O. Sambucci. (2023). “Consumers’ Willingness to Accept Gene-Edited Fruit - An Application to Quality Traits for Fresh Table Grapes.” *QOpen*, 3(1): 1-30. <https://doi.org/10.1093/qopen/qoad008>
47. Uddin, A., **R.K. Gallardo**, B.J. Rickard, J.M. Alston, O. Sambucci. 2022. Consumer acceptance of new plant-breeding technologies: An application to the use of gene editing in fresh table grapes. *PLoS ONE* 17(12): e0270792. Available at: <https://doi.org/10.1371/journal.pone.0270792>

48. Ulloa MC, Marques JMR, Velasco JE, Philocles S, **Torres, A.P.** *Submitted*. Characterizing the US Market for Salad Mixes Through the Lens of Environmental Preferences. HortScience
49. Velasco, J.E., Marques, J.R., **Torres, A.P.**, Marshall, M.I., and Deering, A. *Submitted*. U.S. Consumer Food Safety Concerns for Fresh Vegetables: A Cluster Analysis. Food Control.
50. Wagner, K., **K. Curtis**, and M. Jewkes, (2022). "The Impact of Free Senior Center Farmers' Markets During COVID-19." *Journal of the National Association of County Agriculture Agents*, 15(2). <https://www.nacaa.com/file.ashx?id=ffa08ba5-f659-46fb-b9bc-90aa100cc3b8>
51. Weir, R., J., Hadrich, **A. Bonanno**, and **B.B.R. Jablonski**. (2023). "Beginning farmer status and financial performance differentials", *Agricultural Finance Review*, Vol. ahead-of-print No. ahead-of-print. <https://doi.org/10.1108/AFR-05-2023-0054>
52. Yenerall J., **R. Chen**. (2023) "Household Food Waste and Food Shopping Behavior." *Journal of Food Products Marketing*. 29(7) 232-254.

REFEREED CONFERENCE PROCEEDINGS (S-1088 MEMBERS IN BOLD)

1. Amin, M.D., S. Badruddoza, and **J.J. McCluskey**. "Substitutes or Complements? The Effect of Opening a Food Store on Customer Visits to Neighborhood Food Retailers," presented at the Conference on Economics of Inequity in Agricultural, Food, and Environmental Systems University of Minnesota Campus Club, May 24-25, 2023.
2. Badruddoza, S., M. Dey Amin, **J.J. McCluskey**, and W. Sinclair. "Regional Predictors of Food Retailers' Establishment, Closure, and Relocation," presented at the AAEA annual meeting, Washington DC, July 25, 2023.
3. Baker, Q., P. Canning, S. Rehkamp, M. Gill, **A. Bonanno**, and **D. Thilmany**. Assessing Impacts of COVID-19 Pandemic on the U.S. Macro Food Economy: February 2020 to December 2021. Presentation to 2023 ASTAR workshop. USDA Economic Research Service. Washington DC. July 2023.
4. Bergland, Olvar, Anamika Dubey, Grishma Manandhar, H. Alan Love. "Demand Response Supply Estimation with Smart Meter Data," International Association for Energy Economics, European Conference Milan, July 24–27, 2023.
5. Byrne, A., K. Marchesi, M. Gill, E.M Pelli, W. Sinclair, K. Harris-Lagoudakis and **D. Thilmany** (2023). The New Era of Food: Short- and Long-term Changes in the Food System After COVID-19. Organized Symposia selected for the 2023 AAEA Annual Meetings. Washington DC, July 2023.
6. **Costanigro, M, M.** Dubois, A. Gracia, Jean-Marie Cardebat (2023). "The information Content of Expert Reviews, Brands and Geographical Indications. Presented at the 2023 AAEA conference in Washington Dc. July 23-25.
7. **Curtis, K.** (forthcoming). "Role of Women in the Drink Tourism Industry and Associated Impacts on Rural Economic Development." *Proceedings of the 2023 National Extension Tourism Network Conference*.
8. **Curtis, K.**, and M. Stock, (2023). "Growing a New Cut Flower Industry: Market Needs & Preferences." *Journal of Food Distribution Research*, 54(1), 1-7.
9. Drugova, T., and **K. Curtis**, (2023) "The Impact of Taste Beliefs on Consumer Perceptions of Organic Specialty Bakery Products." *Journal of Food Distribution Research*, 54(1), 17-25.

10. **Gallardo***, **R.K.**, A. Gutierrez-Li, J. Luckstead, R.M. Nayga Jr., B. Sallato-Carmona, and W. Yang. 2023. "Leave or Stay: The Role of Non-Pecuniary Benefits in H-2A Workers' Willingness to Remain in Agriculture." Presentation at the U.C. Davis Conference on Farm Labor: Demand, Supply, and Markets. March 16.
11. Gao, S. **A. Bonanno**, M. Costanigro (2023). "How alcohol distribution laws influence the consumption and shopping behavior of US consumers." Presented by S. Gao at the AAEA conference in Washington Dc. July 23-25, 2023.
12. Gill, M., **A. Bonanno**, and **D. Thilmany**. How did pandemic-era shift in consumer expenditures vary across retailer types? Evidence from counterfactual COVID-19 scenarios. Paper for Organized Symposia "Supply Chain Resilience in the Agri-Food Sector." Organized by J. Hobbs. 2023 Joint CAES/SCAE-WAEA Annual Meeting. Whistler BC, July 2023.
13. Gill, M., **D. Thilmany** and L. Christensen. Did Pandemic-era Shifts in Online Shopping Options Change How and Where Consumers are Shopping for Food? Proposed poster for the 2023 AAEA Annual Meetings. August 2023. Washington DC.

Forthcoming Publications

1. Bauman, A., P. Watson, **D. Thilmany** McFadden, **B.B.R. Jablonski**, C.A. Parks, T. Kaminsky, and A.L. Yaroch, Building Representative State Groupings in an Input-Output model for the Development of an Economic Impact Calculator for Nutrition Incentive Programs. *Submitted to Economic Development Quarterly*
2. **Bonanno A**, **D. Thilmany**; **B. B R Jablonski** and A. Bauman "No Farm Left Behind: Farm Performance and Farm to School Programming Intensity" Revise and Resubmit at *Renewable Agriculture and Food Systems*.
3. **Bonanno**, A., M. Gill and **D. Thilmany**. Was it Real? Decomposing Pandemic U.S. Food Expenditures Changes Using Counterfactuals. Working paper to be submitted to the *Journal of the Ag and Applied Economics Association*.
4. **Costanigro**, **M. C. Berry** and M. Gill. "Corporate social responsibility, regenerative agriculture, and brand perceptions". This work is part of the grant-funded project Farmers for Advancing Regenerative Management Systems (FARMS). Our team is assessing whether food retailers (Walmart, Whole Foods, Kroger) can improve consumer perceptions of their brand by engaging in Corporate Social Responsibility efforts. We considered three CSR activities: supporting Organic agriculture, supporting regenerative agriculture, supporting fair trade. Milestone: survey design, and data collection phase completed. Data analysis is ongoing.
5. **Costanigro M.**, A. Gracia, M. Dubois and J. M. Cardebat. "The information content of expert reviews, brands, and Geographical Indications". This experimental work studies how geographical indications create value for consumers by facilitating wine choice. Milestones: Article submitted for review.
6. Love, E., **B.B.R. Jablonski**, L. Bellows and **D. Thilmany** A Baseline Assessment of School Food Spending and Local Procurement: Exploring the Case of Colorado's Farm to School State Incentive and Other Public Policies. In second review at *Agricultural and Resource Economics Review*.

BOOKS AND BOOK CHAPTERS (S-1088 MEMBERS IN BOLD)

1. **Fonsah E.G.**, J. F. Idowu, Halwart, M., X. Yuan, E.K. Ajani, B.O. Omitoyin, A. Bart, G. Burtle and O. Ajayi (2023). Investment and Business Manual for Fish-Rice Production System in Ebonyi and Kebbi States of Nigeria. Feed-the-Future Innovation Lab for Fish Aquaculture & Rural Communities: Farm Diversification Project #A0032656RF (UGA, FAO & UI).
2. **Fonsah, E. G.** (2023). “Vegetable and Pulses” In: *2023 Georgia Ag-Forecast*. Strategic Insights for Georgia’s No.1 Industry. College of Agriculture and Environmental Sciences, University of Georgia, pp. 12-13. https://secure.caes.uga.edu/extension/publications/files/pdf/AP%20130-1_1.PDF
3. **Fonsah, E. G.** (2023). “Fruit and Tree Nuts” In: *2023 Georgia Ag-Forecast*. College of Agriculture and Environmental Sciences, University of Georgia, pp. 10-11. https://secure.caes.uga.edu/extension/publications/files/pdf/AP%20130-1_1.PDF

GRANTS, CONTRACTS, AND/OR OTHER RESOURCES OBTAINED BY ONE OR MORE PROJECT MEMBERS AS A RESULT OF THE PROJECT'S ACTIVITIES: (S-1088 MEMBERS IN BOLD)

Abbreviations:

PI: Principal Investigator, CoPI: Co-Principal Investigator, USDA: United States Department of Agriculture, SCRI: Specialty Crop Research Initiative, WATFRC: Washington Tree Fruit Research Commission, NCPN: National Clean Plant Network, APHIS: Animal and Plant Health Inspection Service.

1. Allen, K., R. Ward, and **K. Curtis**: USDA Agricultural Marketing Service, 2023-2025. \$5 million. Southwest Regional Food Business Center (Utah).
2. **Arriana Torres (Purdue)**: Economic impact of biological controls in high tunnel production (also for turfgrass website but unrelated): research and extension. Funding from USDA-SCRI.
3. **Arriana Torres (Purdue)**: Diverse Corn Belt, Market opportunities for crops produced in diversified farming systems (regenerative agriculture): wholesalers, retailers, restaurants: research and extension. Funding from USDA Sustainable Ag Systems.
4. **Arriana Torres (Purdue)**: Consumer preferences for low-input attributes on fresh salad mixes: research. Funding from USDA-FNRI
5. **Arriana Torres (Purdue)**: Consumer preferences for food safety-related attributes in fresh vegetables: research. Funding from USDA-FNRI
6. **Arriana Torres (Purdue)**: Adoption of value-added technologies for specialty crops (beginning farmers, farmers): research. Funding from USDA-NIFA
7. **Arriana Torres (Purdue)**: Online curricula for contingency planning for agribusinesses: cohort and certificate from Purdue Extension. Funding from USDA-SARE
8. **Arriana Torres (Purdue)**: Market strategies for indigenous women farmers in Peru, focused on passion fruit and chocolate products with potential to export. Funding from USAID

9. **Arriana Torres (Purdue):** Diversification of markets and market linkages in the olive industry in Iraq, with focus displaced Kurdish farmers. Funding from USAID
10. Butler, D.; Wszelaki, A.; **Velandia, M.**; Shekoofa, A.; Trejo-Pech, C., "Alley Cropping Agroforestry as a Climate Change Resiliency Strategy for Vegetable Production in the Southeastern US." Southern Region SARE Program – University of Georgia. Planned Performance Period: 2023-2026. Total funding: \$367,000.
11. **Curtis, K.** (Co-Principal Investigator): USDA Agricultural Marketing Service, 2023-2025. \$5 million. Southwest Regional Food Business Center – Utah.
12. **Curtis, K.** (Principal Investigator/Project Director): USU Extension Grants Program, 2023-2024. \$30,000. Growing the Utah Cut Flower Market.
13. **Curtis, K.,** (Co-Principal Investigator): Western SARE Research & Education, 2023-2026. \$99,979. Expanding cut flower production education supports agricultural professionals and small farms.
14. DeLong, K.L., D.W. Hughes, **A. Rihn, X. Chen,** R. Painter. "Developing a Successful Marketing Channel for Rural Wineries in Tennessee." USDA - FSMIP. Total Requested: \$241,138.
15. Drink Better, Drink Less? Implications of Gender Stereotypes in Local Food and Craft Beverage Marketing. AAEA Sylvia Lane Graduate Mentor Research Proposal. \$2500 Funded by the AAEA Foundation. 2023-24. With Courtney Cooper.
16. Local and Regional Food System Resiliency and Recovery. Phase 2 & 3 of a USDA Ag Marketing Service cooperative Agreement (with U. of Kentucky). \$780,000. Continuance of Local and Regional Food Systems COVID-19 Rapid Response. Collaboration with University of Kentucky, U of Arkansas and Cooperative Agreement with the USDA Ag Marketing Service. \$135,000. With **B. Jablonski** and L. Christensen.
17. Lopez, R., B. Whipker, J. Boldt, **A.L. Rihn,** C.J. Currey, A.M. Shaw, M. Hausbeck, C. Engfehr, E. Runkle, K.J. Walters, B.K. Behe. "Expanding Fresh Culinary Herb Production in Greenhouses." USDA-NIFA-SCRI. 2023-2028. Co-PI. Total Requested: \$3,000,000.
18. **Huang, K.-M.,** "Fresh Fruit and Vegetable Market and Supply System of Mississippi and its Neighboring States: Interrelationship between Agribusiness Development and Social Outcomes," accepted by USDA NIFA, Federal. Multi-State HATCH Project.
19. Northwest Mountain Regional Food Business Center. Regional Food Business Center proposal to the USDA Ag Marketing Service. \$30 million. With Oregon State, U of Idaho, Montana State, Washington State and U of Wyoming. 2023-2028.
20. Rudolph, R.; Haramoto, E.; Gauthier, N.; Larson, J.; Wszelaki, A.; Hansen, Z.; **Velandia, M.** "Evaluation of Soil Solarization as a Sustainable Management Method in Upper Southeast High Tunnels for Pests, Pathogens, and Weeds." Southern Region SARE Program – University of Georgia. Planned Performance Period: 2023-2026. Total funding: \$367,000. (*Collaboration with the University of Kentucky*).
21. Walters, K.; Sams, C.; **Velandia, M.; Rihn, A.;** and Trejo-Pech, C. "Exploring the Feasibility of End of Production Regimens to Improve Leafy Green Nutritional Content, Appearance, And Post-Harvest Longevity," USDA - NIFA. Planned Performance Period: 2023-2028. Total requested: \$749,767.

22. Yenerall, J., **X. Chen**. “Consumer Preferences for Online Grocery Shopping Attributes, Their Influence on Food Choice, and Nutrition Security Implications.” USDA-NIFA-AFRI. New Investigator Seed Grant. PD. 2023-2025. \$300,000.
23. UDSA NIFA/Specialty Crop Research Initiative/USDA-NIFA-SCRI-xxx “Mechanical harvesting management practices and analysis of adoption barriers approach for sustainable management of fresh market onion production in the Southeastern United States”. PI: Malla, Subas TAMU; **CoPI- UGA (Fonsah)**. \$5,219,756
24. Drink Better, Drink Less? Implications of Gender Stereotypes in Local Food and Craft Beverage Marketing. AAEA Sylvia Lane Graduate Mentor Research Proposal. \$2500 Funded by the AAEA Foundation. 2023-24. With Courtney Cooper. (with Arkansas)
25. Northwest Mountain Regional Food Business Center. Regional Food Business Center proposal to the USDA Ag Marketing Service. \$30 million (proposed \$50 million with 2 additional states). With Oregon State, U of Idaho, Montana State, Washington State and U of Wyoming. 2023-2028.
26. Local and Regional Food System Resiliency and Recovery. Phase 2 & 3 of a USDA Ag Marketing Service cooperative Agreement (with U. of Kentucky). \$780,000. Continuance of Local and Regional Food Systems COVID-19 Rapid Response. Subcontract with University of Kentucky and Cooperative Agreement with the USDA Ag Marketing Service. \$135,000. With **B. Jablonski**. (with U. of Kentucky)
27. School food procurement: Comparing costs across procurement programs. Funded by the Urban School Food Alliance. \$65,000. 2021-22. with A. Bauman and **B. Jablonski**
28. Development and Expansion of a State-Specific Economic Impact Calculator for Nutrition Incentive Projects. Grant with Gretchen Swanson Center for Nutrition Incentives. \$82,000. 2021-22. with A. Bauman and **B. Jablonski**
29. Assessing Sustainable Development Goals: Six Cross-Nationally Comparable Agri-Food Pilot Studies. \$425,000 Cooperative Agreement with USDA Economic Research Service and Cornell University. 2021-24. (with M. Gomez at Cornell)
30. Exploring the Scale, Scope and New Supply Chain Linkages in the Local Food Sector. Cooperative Agreement with USDA Economic Research Service. \$166,000. 2021-23. With **B. Jablonski** and L. Chenarides (Arizona State University, now at CSU).
31. Stock, M., **K. Curtis**, et al.: Western SARE Research & Education, 2023-2026. \$99,979. Expanding cut flower production education supports agricultural professionals and small farms.