

2017-18 Planning Grants Program

Project Title: Increasing Local Food Production with Value-Added Processing in the Northeast

Team Members:

Name	Discipline	Institution/Agency/Other
Amanda Kinchla (Confirmed)	Food Science: food safety, HACCP, food safety education, food product development, application research	Extension Assistant Professor/ Food Science Department, University of Massachusetts (MA)
Dan Lass (Confirmed)	Resource Economics: econometrics, regional farm operation decisions	Professors, Resource Economics University of Massachusetts (MA)
Jason Bolton	Food Science: food processing, food safety, extension, application research	Assistant Professor, University of Maine (ME)
Jill Fitzsimmons (Proposed)	Resource Economics: supply chain analysis, imperfectly competitive markets, regional food systems	Agricultural Marketing Specialist / PhD Candidate USDA Agricultural Marketing/ University of Massachusetts (MA)
Miguel Gomez (Proposed)	Economics: Community, Local, and Regional Food Systems	Associate Professor, Dyson School, Cornell University (NY)
Erbin Crowell (Proposed)	Association of over 30 food co-ops; sustainable regional food system and community enterprises	Executive Director, Neighboring Food Co-Op Assoc. (VT)
Eric Stocker (Proposed)	Food distribution center	Owner, Squash Inc. (MA)
John Waite (Confirmed)	Regional food processing facility	Executive Director, Franklin County Community Development Corporation, Food Processing Center (MA)
Sean Buchanan (Proposed)	Food distribution center: operations management, business expansion, business sustainability	President Black River Produce (VT)
Kenneth Foppema (Proposed)	Vegetable production	President/ Farmer, New Eng. Vegetable & Berry Growers Association (MA)/ Foppema Farm
Dale Riggs (Proposed)	Vegetable production	President/Farmer New York State Berry Growers Association/ The Berry Patch (NY)
Andy Fellenz (Proposed)	Organic fruit and vegetable production	Coordinator, NOFA-NY
Mike St. Clair (Proposed)	Urban retail sales	General Manager, Harvest Coop Markets (MA)

Team Leader Contact Information:

Name: Amanda Kinchla

Address: University of Massachusetts, 102 Holdsworth Way, Chenoweth Laboratory, Amherst, MA 01003

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Mission and Goals of the Proposed Program

Food systems entrepreneurs have an opportunity to meet strong consumer interest for local and regional foods by expanding local food production through value-added processing, however, limited research and extension technical support are currently available for successful implementation. This proposal seeks financial support for an in-person meeting of multi-state partners, within and outside of the northeast extension network, to build an integrated research agenda and funding strategy that is mutually beneficial to relevant food processing supply chain players. ***The goal of this meeting is to develop an integrated research agenda and funding strategy to address the challenges of developing and disseminating information required to determine the profitability/ viability of a local value-added supply chain for key supply chain actors: farmers, processors, distributors, and retailers.*** This meeting is aimed at sharing current knowledge, research and outreach capabilities of the Extension network, establishing a broader research agenda and a focused strategy to address this critical need with stakeholders and to promote regional collaboration for future funding. The planning strategy will specifically focus on:

- Identifying a centralized data management system among the partners (research, extension and industry) to share research information.
- Develop a research agenda and approach for conducting consumer market research studies and food product development research to promote economic viability for local producers.
- Build a strategy for future grant funding to provide the technical resources to further support northeast producers and processors
- Identify resources to further enhance regional programming and training to meet the needs of northeast processors.

Justification for the program relative to stakeholder needs and potential for sustained external funding

It is anticipated that sales of fresh produce will increase 18% by 2019(Mintel, 2014). Furthermore, according to Mintel, consumers are more inclined to source locally grown fresh produce (64%)(Bloom, 2014). This is because consumers value the freshness of locally sourced foods and there is a strong interest in supporting local economies (Bloom, 2014). The industry research firm Business Insider reported that local food sales in the U.S. grew from \$5 billion to \$12 billion between 2008 and 2014, and estimates that sales will continue to grow to \$20 billion in 2019, faster than total food and beverage sales (Hesterman, 2017). Small and medium scale growers in the northeast are challenged to offer year round products due to the shorter agricultural season. There is a strong need to conduct research and provide technical support through extension programming specific to regional-scale value-added processing. Value-added processing for local produce is an approach to help improve the local economy, increase the viability and sustainability of local agriculture, and provide consumers with local food options year round. However, market opportunities for local produce products have not been assessed to better understand the true value of local including product attributes such as “local”, “healthy” and “environmentally friendly” that are valued by consumers and impact their buying preferences. Conducting the research that assesses the market opportunities (market research and product development) will help farmers focus on specific produce varieties and determine if value-added products have economic impact in the northeast. Furthermore, building a strategy that helps to identify a research and development strategy alleviates the financial burden of business development for individual growers and capitalizes on maximizing regional outreach for technical support.

This group will foster collaboration that promotes integration of research and extension aimed to 1) share the working knowledge collected in this area, 2) discuss the application challenges in-field, 3) build an integrated research approach that leverages the capabilities of the collaborative partners, 4) addresses the stakeholder needs within the northeast.

Program Sustainability

Over the past several years, the northeast region has been able to utilize NEED/NERA funded support as a means to establish collaborations, identify strategic approaches and secure funding to help better address the regional needs of the northeast. Most recently, a 2015 NEED/NERA facilitated coordination of the Northeast Postharvest Research and Extension Service Hub (NE-PHRESH). Through this established and collaborative network, the team was able to coordinate, submit and receive \$1M funding from the FDA for the Northeast Center to Advance Food Safety (NECAFS). The legacy of previous planning support has demonstrated historical success and sustainability. The requested funding aims at leveraging new food system collaborations that will include a diverse group of disciplines (extension, researchers, retail, producers and processors) to help to foster relationships with new partners that can further provide agricultural support with a focus on value-added production. The goals of this project align with AFRI Foundational Program and other initiatives. Through continued NECAFS activity, we have supportive data that identifies the need and funding streams would support these efforts. However, we need the initial funding to support the planning efforts to build a solid and cohesive strategy. Many funding opportunities call for research and outreach education among multi-state teams. This project will allow collaborators to have a mechanism in place prior to a “request for applications” and allow for a more successful approach to obtaining external funding. Examples of relevant funding that would be alignment with the mission of this project include: Sustainable Agriculture Research & Education, USDA AFRI Rural Entrepreneurs and Communities Grant, USDA AFRI Economics, Markets and Trade and/or USDA AFRI Small and Medium-Sized Farms. All have an anticipated submission date of June/July 2018.

Activities to be engaged in by Team Members

This proposal intends to engage team members representing cross-disciplinary stakeholders, such as academic and extension researchers and educators, food producers, food retailers, distributors and processing facility staff who play a role in supporting local food systems. This will allow team members to discuss opportunities and barriers to growth of food production and encourage and promote collaboration. Through the organization of an in-person meeting, team members can begin the process of defining and prioritizing regional research and educational needs and establishing a mechanism for obtaining external funding. PI-Kinchla is well versed in remote meeting software and centralized data management systems and will leverage existing resources to facilitate the communication channels for this project (i.e. GoToMeeting: Online meetings; Box.com: online file sharing and content management service).

Explanation of Roles of Team Members

Project Lead/PI- Amanda Kinchla will manage the overall planning coordination activities of the project including meeting logistics, managing outputs and deliverables, communication efforts, managing the budget and travel reimbursement administration. **Team Members**– All participating team members (please see cover page) will be responsible for input during conference calls and the face-to-face planning sessions. In addition, team members are also encouraged to help identify other contributors that would help to expand the network of collaboration. **Proposal Committee-** A subset of the Project Team will work to formalize the output of this meeting into a cohesive proposal for

funding and the continuation of collaborative efforts.

Timetable for Completion of Planning Activities and Preparation of a Proposal

Timeline	Activities
Q1: Assumed Jun-Aug	<ul style="list-style-type: none"> • Initial “Kick-off” meeting with the team via phone to review mission and assign tasks • Coordinate centralize literature review on wash water sanitizer research • Investigate grant opportunities (continuous process) • Secure planning details for the 2-day meeting tentatively planned in Amherst, MA
Q2: Sept-Nov	<ul style="list-style-type: none"> • Conference calls: plan meeting, discuss research methods and writing proposal • Field 2 day: face-to-face meeting to share/discuss project goals, objectives, methods and measurable impacts • Issue meeting minutes and project summary report (PI-Kinchla) • Identify Proposal Committee
Q3: Dec-Feb	<ul style="list-style-type: none"> • Web-conference to finalize the project vision, scope, and proposal outline.
Q4: Mar-May	<ul style="list-style-type: none"> • Prepare proposals to NIFA/AFRI or other appropriate source • Report on the final outcome of this project.

Budget for Planning Activities (travel, meeting expenses, etc.): ~\$5,000

Travel to Meeting Site	Lodging	Meals	Meeting Supplies	Conference Room Rental	TOTAL
\$2,000	\$1,000	\$1,125	\$375	\$500.00	\$5,000

Leveraging Resources

The funding requested is primarily to support the collaboration of the contributing team. The team intends to leverage resources where appropriate to maximize efficacy and efficiency. The collaborating team has been thoughtfully crafted to include a diversified group of expertise including food safety, vegetable production, resource economics, food distribution, retail markets, producers, processors, and extension educators. Having a cross-sector of expertise is intended to further leverage existing resources for future grant funding. Furthermore, indirect contributions will be utilized by the PI including online conferencing (GoToMeeting) and data sharing software (Box.com) to facilitate remote meetings to help facilitate with the goals of the project.

Appendix A – CV of Team Leader

Demonstrating track record of successful external funding and leading cross-disciplinary and/or multi-institutional collaborations.

References

Bloom, B. (2014). The locavore: Attitudes towards locally sourced foods. (No. 680572).

<http://academic.mintel.com/display/680572/> : Mintel.

Hesterman, O. H.,D. (2017). The demand for 'local' food is growing — here's why investors should pay attention. Retrieved from <http://www.businessinsider.com/the-demand-for-local-food-is-growing-2017-4>

Mintel. (2014). Segment performance - fresh produce. Retrieved from

<http://academic.mintel.com.silk.library.umass.edu/display/707535/?highlight#hit1>

2017 NEED/NERA Expense Budget

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Budget Item	Cost	Justification
Travel to Meeting Site	\$2,000	Assuming average car travel is 467 miles round trip w/ 2017 mileage rate 0.535/mile
Lodging	\$1,000	Assumes lodging for 8 People @ UMass Hotel \$125/pp
Meals	\$1,125	Assuming meeting meals: 13 participants for 2 breakfast (\$8.50), 2 lunches (\$15.25), 1 dinner (\$22.50) plus 7% MA tax + 21% auxiliary service fees
Meeting Supplies	\$375	Overhead rental @ \$175/day + print materials + other office supplies
Conference Room Rental	\$500	UMass Campus Center Meeting Room Fee, Aux Services @\$250/day
	\$5,000	TOTAL

AMANDA J. KINCHLA

BIOGRAPHICAL SKETCH

PROFESSIONAL PREPARATION

Institution	Location	Major	Degree & Year
University of Massachusetts	Amherst, MA	Food Science	BS, Food Science 1998
Rutgers, The State University	New Brunswick, NJ	Food Science	MS, Food Science, 2005

PROFESSIONAL EXPERIENCE

Position	Department	Institution	Location	Year(s)
Associate Scientist	R&D/Food Safety	Kraft Foods	Tarrytown, NY	1998-2002
Scientist	R&D/Food Safety	Kraft Foods	Tarrytown, NY	2002-2005
Senior Food Scientist	Research & Development	ConAgra Foods	Turners Falls, MA	2005-2009
Manager	Research & Development	ConAgra Foods	Turners Falls, MA	2009-2010
Product Development/Food Safety Specialist	n/a	Kinchla Food Consulting	South Deerfield, MA	2010-2012
Assistant Extension Professor/ Extension Specialist	Food Science	University of Massachusetts	Amherst	2005-Present

PUBLICATIONS, PEER-REVIEWED (within the past four years)

- Xu, F., Pandya, J., McClements, D.J, Kinchla, A. Plant-based Emulsions as Delivery Systems for Tocotrienols: Formation, Properties and Simulated Gastrointestinal Fate, 2017 (submitted).
- Wong, K., DiStefano, G., Toong, K., Decker, E. Autio, W., Kinchla, A. Utilizing Mushrooms to Reduce Overall Sodium in Taco Filling Using Physical and Sensory Evaluation, 2017 (submitted).
- Yang, T; Zhao, B.; Kinchla, A.; Clark, J.; He, L. Investigation of Pesticide Penetration and Persistence on Harvested and Live Basil Leaves using Surface-Enhanced Raman Scattering Mapping. Journal of Agricultural and Food Chemistry, 2017, accepted jf-2017-00548m.R1.
- Yang, T., Zhao, B., Hou, R, Zhang, Z., Kinchla, A.J., Clark, J.M., He, L., Evaluation of multi-classes pesticide penetration in fresh produce using surface-enhanced Raman scattering mapping. Journal of Agriculture and Food Chemistry, 2016, Vol. 81, No. 11, Pages 2891 - 2901).
- Zhang, Z., Guo, H., Carlisle, T., Mukherjee, A., Kinchla, A.J., White, J.C., Xing, B., He, L., September 2016. Evaluation of Postharvest Washing on AgNPs Removal from Spinach Leaves. Journal of Agricultural and Food Chemistry. 64(37):6916-22.
- Yang, Ti. Zhang, Z., Zhao, B., Hou, R., Kinchla, A., Clark, J., He, L. Real-time and in situ monitoring of pesticide penetration in edible leaves by surface-enhanced Raman scattering mapping. Analytical Chemistry, 2016. 88 (10), Pages 5243-5250.

- Chong, V., Kinchla, A.J. Assessing Commercial Quality Control Tools for On-Farm Postharvest Sanitation. Research & Reviews: Journal of Food Processing and Dairy Technology. June, 2016.
- Wang, D., Wang, Z. He, F., Kinchla, A.J., Nugen, S. Enzymatic Digestion for Improved Bacteria Separation from Leafy Green Vegetables. Journal of Food Protection, Vol. 79, No. 8, 2016, Pages 1378–1386.
- Wang, Z., Wang, D., Kinchla, A., Sela, D., Nugen, S. Rapid screening of waterborne pathogen using phage-mediated separation coupled with real time PCR detection. Anal Bioanal Chem. 2016 Jun; 408(15):4169-78.
- Alcaine, S., Law, K. Ho, Kinchla, A., Sela, D., Nugen, S. Bioengineering Bacteriophages to Enhance the Sensitivity of Phage Amplification-based Paper Fluidic Detection of Bacteria. Biosensors & Bioelectronics, Vol. 82, February 2016.
- Wang, D., Kinchla, A., Nugen, S. Rapid detection of Salmonella using a redox cycling-based electrochemical method. Food Control, Vol 62, p81-88, April 2015.

OTHER PUBLICATIONS

- Kinchla, A.J., Harper, K. 2016. Produce Brush Washer Study: Finding a standard operating procedure. UMass Extension Vegetable Notes newsletter. Vegetable Notes. Vol 28:21.
- Extension Outreach Videos:
 - Clean Greens, University of Massachusetts, On-Farm Food Safety, <http://bcove.me/8bq1pm6b> , 2016.
 - Standard Operating Procedures, University of Massachusetts, On-Farm Food Safety, <http://bcove.me/7qisyjzk> , 2016.
 - Cleaning Know How, University of Massachusetts, On-Farm Food Safety, <http://bcove.me/9g9ltrvi> , 2016.
 - Equipment Cleaning, University of Massachusetts, On-Farm Food Safety, <http://bcove.me/wgrukxr7> , 2016.

SERVICE & OUTREACH

- Council Member, Massachusetts Food Policy Council (2012 - current)
- Chair, UMass Internship Committee (2012 - current)
- Food Science Undergraduate Advisor (2013 - current)
- Hosting Undergraduate Researchers for independent study research
- Food Safety training: Preventive Controls for Human Food, Better Process Control School, Instructor Lead Hazard Analysis of Critical Control Points (HACCP), and Produce Safety (Produce Safety Alliance)
- Technical Advisor to the Western MA Food Processing Center, Commonwealth Kitchen, MA Food Safety Education Partnership, and MA Dept. of Agriculture.
- Co-Chair for the Northeast Center to Advance Food Safety (NECAFS). This is a collaboration among the 12 states (CT, DE, MA, MD, ME, NH, NJ, NY, PA, RI, VT, WV) and the District of Columbia that make up the Northeast region which aims to jointly advance understanding and practice of improved food safety among the region's small and medium sized produce growers and processors.
- Professional Memberships: ASM, ACS, IFT, IAFF