CHRISTOPHER W. CALLAHAN
Curriculum Vitae

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SUMMARY

I am driven by helping people thrive. I love to work on and lead teams that help people solve problems and apply appropriate knowledge and technology for the improvement of their lives, families, businesses, and communities.

Recently, I have been engaged in leadership and administrative roles within UVM Extension where I facilitate the collective impact of a team of Extension staff and faculty helping to be put research-based knowledge to work for the people of Vermont.

My disciplinary work focuses on the application of engineering and business knowledge to food systems. I have worked with food producers, processors, and distributors to improve efficiency, quality, safety, and profitability through the integration of technology, systems, and process controls.

I have focused my applied research and Extension programming on protected culture (e.g. greenhouses, high-tunnels), postharvest practices and storage (e.g. food safety, efficiency, water management, environmental control, drying systems, humidification systems, refrigeration systems), energy use in the food system (e.g. farm-based biofuels, renewable energy systems, energy efficiency measures, climate change mitigation & adaptation), and development of specialized harvest and postharvest equipment (e.g. hops harvesting, hops drying, meat curing). This work has led to a number of technical innovations that are either in application for patent or have been made available as open-source technology for public adoption.

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EDUCATION & EXPERIENCE

EDUCATION & LICENSURE

2006 P.E. - Professional Engineering License. State of New York, Department of Education, Office of the Professions, Albany, NY. #084264

2003 P.E. - Professional Engineering License. State of Connecticut, Department of Consumer Protection, Hartford, CT. #23000 (Inactive)

2003 M.B.A. - Technological Entrepreneurship, Rensselaer Polytechnic Institute, Troy, NY

1997 B.S. - Mechanical Engineering, Rensselaer Polytechnic Institute, Troy, NY

ACADEMIC & PROFESSIONAL EXPERIENCE

2012-Present University of Vermont Extension (College of Agriculture and Life Sciences) Bennington, VT.

11/2025- Interim Director and Associate Dean of Extension
7/2025- Acting Director, Vermont 4-H
3/2025- Associate Director of Extension

Lead and facilitate the work of UVM Extension - programming, fiscal operation, and internal and external communications.

2024- Extension Professor of Agricultural Engineering
2018-2024 Extension Associate Professor of Agricultural Engineering
2016-2026 Director, The Northeast Center to Advance Food Safety (NECAFS)
2012-2018 Extension Assistant Professor of Agricultural Engineering

Develop and deliver extension educational programs and conduct research with relevance to the food system. Work focuses on postharvest and food safety practices, protected culture, and sustainable energy.

2005-2014 Callahan Engineering, PLLC, Cambridge, NY.
Principal

Consulting on agricultural engineering, sustainable bioenergy projects, building energy modeling, fuel cell system design and development, and energy auditing for commercial and industrial clients.

1998-2005 UTC Fuel Cells. United Technologies Corporation, South Windsor, CT.

Transportation fuel cell engine development. Integrated product development, systems engineering, requirements management, functional design and development, performance test and customer support. Business development. Intercultural technology transfer, IP management and technical education.

1997-1998 Mestek, Inc., Westfield, MA.

Boiler and combustion sub-system design and development. Detail design with 3D CAD focused on molded cast iron heat exchangers, sheet metal, and assembly.

1992-1997 Database Programmer, Self Employed, Various Locations.

TEACHING

EXTENSION EDUCATION & OUTREACH PROGRAMS

Formal Educational Event Summary

Year	Events	Attendees	Contact Hours
2025	11	1,170	4,878
2024	10	562	2,740
2023	12	631	5,816
2022	12	584	3,575
2021	12	577	3,507
2020	15	716	3,205
Total past 5 years	61	3,070	18,843
Total since 2010	185	10,786	38,796

2025 Blueberry Hill Farm Field Day. Presenter: Hygienic Design and Cleaning and Sanitizing of Harvesting Equipment. L. Calderwood, R. Machado, L. Werner, **C. Callahan.** University of Maine. May 26, 2025. [200 attendees, 1 hours, 200 contact hours]

Produce Safety Alliance Grower Training with Aquaponic and Hydroponic Supplements. Lead Trainer and Module 6 Postharvest Handling and Sanitation. Pilot delivery of new tailored curriculum. E. Newbold, **C. Callahan**, S. Fogarty, R. Nieto, R. Catalena, L. George, P. Tocco. Co-Lead. May 20-22, 2025. [40 attendees, 16 hours, 640 contact hours]

Program Area Team Reboot. UVM Extension Performance Improvement Conference (EPIC). **C. Callahan**, S. Albaugh, K. Alexander, C. Yandow, R. Beckford, I. Leslie, M. Shcheglovitova, S. Kleinman, C. Bove, A. Kosiba, G. Kozlowski, A. May, S. Lucas. Lead. May 07, 2025. [140 attendees, 1 hours, 140 contact hours]

Program Management in Uncertain Times. UVM Extension Performance Improvement Conference (EPIC). Lead. May 06, 2025. [40 attendees, 16 hours, 640 contact hours]

Produce Safety Alliance Grower Training. Lead trainer. **C. Callahan**, H. Estrin, S. Ebeling, T. Diego, A. Chamberlin, S. Fogarty, A. Loewald. Lead. Mar 5-6, 2025. [40 attendees, 16 hours, 640 contact hours]

Produce Safety Resources for Aquaponic and Hydroponic Producers. Southern Regional Integrated Produce Safety Conference. **C. Callahan**, E. Newbold, S. Fogarty. Lead. Feb 12, 2025. [85 attendees, 0.5 hours, 42.5 contact hours]

Strategies for Reducing the Risk of Microbial Contamination in Small Farms. Produce Safety Alliance Fellows Presentation. Webinar. **C. Callahan**. Lead. Jan 29, 2025. [35 attendees, 1 hour, 35 contact hours]

Repair, Replace, Retool, or Retire: On-Farm Engineering. Vermont Vegetable and Berry Growers Association Annual Meeting. **C. Callahan**. Lead. Jan 28, 2025. [200 attendees, 0.25 hours, 50 contact hours]

Crop Field Flooding and Food Safety: Industry and Extension Responses, Research, and Knowledge Gaps. International Association for Food Protection (IAFP) Webinar. S. Salas, T. Walksy, C. Rock, E. Rogers, J. Hall, W. Brodegard, G. Komar, **C. Callahan**. Panelist. Jan 30, 2025. [100 attendees, 1 hours, 100 contact hours]

NECAFS Annual Meeting. E. Newbold & **C. Callahan**, Co-Lead. Jan 21, 2025. [140 attendees, 16 hours, 2240 contact hours]

Welds and What-not: Sanitary Design for Produce Farms. Southeast Regional Fruit and Vegetable Conference. **C. Callahan**. Lead. Jan 10, 2025. [150 attendees, 1 hours, 150 contact hours]

2024 We Really Need to Do Something About Our Wash Pack. C. Callahan and A. Chamberlin. New England Fruit and Vegetable Conference. Manchester, NH. Dec 18, 2024. [200 attendees, 0.5 hours, 100 contact hours]

Farm in the Spotlight: Honey Field Farm. **C. Callahan** and R. Maden. MOFGA Farmer to Farmer Conference. Sugar Loaf Resort, ME. November 4, 2024. [12 attendees, 1.5 hours, 18 contact hours]

Food Safety in Wild Blueberries. J. Perry and **C. Callahan**. MOFGA Farmer to Farmer Conference. Sugar Loaf Resort, ME. November 3, 2024. [6 attendees, 1.5 hours, 9 contact hours]

Food Safety Plans. L. Werner and **C. Callahan**. MOFGA Farmer to Farmer Conference. Sugar Loaf Resort, ME. November 3, 2024. [4 attendees, 1.5 hours, 6 contact hours]

Lightning Talk - DEI in Action in Extension. **C. Callahan**. Lead. May 15, 2024. [100 attendees, 0.03 hours, 3.3 contact hours]

Emergency Preparedness - Office Scenario. C. Cooper, J. Marcus, **C. Callahan**. Co-Lead. May 15, 2024. [30 attendees, 1 hour, 30 contact hours]

Emergency Preparedness - Field Scenario. **C. Callahan**, J. Marcus, C. Coooper. Co-Lead. May 14, 2024. [30 attendees, 1 hour, 30 contact hours]

Packhouse Drains. **C. Callahan**. Michigan State Produce Safety Team Inservice. Apr 30, 2024. Lead. Apr 30, 2024. [16 attendees, 1 hours, 16 contact hours]

Produce Safety Alliance Grower Training. **C. Callahan**, H. Estrin, T. Diego, K. Eberling, A. Chamberlin, S. Fogarty, S. McIlvennie. Module 1 – Introduction to Produce Safety and Module 5.2 Postharvest Agricultural Water. Lead, 2 modules. Mar 25, 2024. [24 attendees, 12 hours, 288 contact hours]

NECAFS Annual Meeting. E. Newbold & **C. Callahan**. Co-Lead. Jan 23, 2024. [140 attendees, 16 hours, 2240 contact hours]

2023 FDA Annual Produce Safety Research Consortium Meeting. Organizing Committee, Presenter. Jun 27, 2023. [60 attendees, 12 hours, 720 contact hours]

UVM Agroecology Extension Fellows Meeting. V. Izzo, S. Lewins, & **C. Callahan**. Presenter. Jun 06, 2023. [14 attendees, 1 hour, 14 contact hours]

National USDA NIFA Food Safety Outreach Program (FSOP) Project Directors Meeting. K. Schneider, R. Goodrich, M. Danyluk, E. Newbold, & **C. Callahan**. Organizing Committee, Session Lead. May 31, 2023. [70 attendees, 12 hours, 840 contact hours]

Strategizing to Advance Future Extension and Research for Controlled Environment Agriculture (SAFER CEA). A. Shaw, K. Gibson, S. Ilic, M, Ivey, M. Amalaradjou & **C.**

Callahan. Organizing Committee & Panel Participant. The Ohio State University Controlled Environment Agriculture Research Complex. April 12-14, 2023. [54 attendees, 24 hours, 1,296 contact hours]

Hygienic Design, Cleaning, and Sanitizing for Produce Farms. Workshop Series for Wild Blueberry, Tree Fruit, and Diversified Vegetable Producers. R. Machado, L. Werner, **C. Callahan**, J. Perry, G. Koehler, L. Calderwood, S. Datta. Hygienic Design and Hands-on Learning Lead. Hope, Monmouth, and Auburn, Maine. April 4-6, 2023. [42 attendees, 8 hours, 336 contact hours]

Cold Storage for Produce Farms: Best Practices for Quality, Efficiency, and Produce Safety. **C. Callahan.** NL Horticulture Producers Council 2023 Annual Conference. Gander, Newfoundland, Canada. March 8, 2023. [60 attendees, 1 hour, 60 contact hours]

Post Harvest Handling of Fruit & Vegetable Crops. **C. Callahan.** NL Horticulture Producers Council 2023 Annual Conference. Gander, Newfoundland, Canada. March 7, 2023. [60 attendees, 1 hour, 60 contact hours]

Cold Storage for Produce Farms: Best Practices for Quality, Efficiency, and Produce Safety. **C. Callahan**. Colorado Fruit and Vegetable Growers Association Annual Meeting and Conference. Westminster, CO. February 21, 2023. [61 attendees, 1 hour, 61 contact hours]

NECAFS Annual Meeting and Conference. E. Newbold & **C. Callahan**. Hartford, CT. January 18-19, 2023. [140 attendees over 2 days, 16 hours, 2,240 contact hours]

Produce Safety Alliance Grower Training. H. Estrin, K. Sweet, **C. Callahan**, A. Chamberlin, T. Diego. Module 1 – Introduction to Produce Safety and Module 5.2 Postharvest Agricultural Water. Berlin, VT. January 23, 2023. [17 attendees, 8 hours, 136 contact hours]

Sustainable Energy Sources and Energy Efficiency for Greenhouses, Tunnels, and Hydroponic Operations: What's Working Now and What May the Future Hold? **C. Callahan**. From Food to Flowers: Everything Local Hybrid Conference. Springfield, IL. January 13, 2023. [32 attendees, 1 hour, 32 contact hours]

Produce Safety Systems: What are the key systems, equipment and tools I should be thinking about? **C. Callahan**. From Food to Flowers: Everything Local Hybrid Conference. Springfield, IL. January 13, 2023. [21 attendees, 1 hour, 21 contact hours]

2022 High Tunnel and Greenhouse Ventilation: Challenges, Practice, and Trends. **C. Callahan.** New England Fruit and Vegetable Conference. Manchester, NH. December 15, 2022. [40 attendees, 30 minutes, 20 contact hours]

Farmer to Farmer: Wash Pack and Postharvest. **C. Callahan**, P. Arnold, C. Alexander, A. Chamberlin. New England Fruit and Vegetable Conference. Manchester, NH. December 14, 2022. Facilitator. [60 attendees, 2 hours, 120 contact hours]

PFAS, Postharvest, and Produce Safety. **C. Callahan**, C. Goosen, A. Nordell, J. Davis, P. O'Brien, M. O'Brien, K. Donald, A. Reid, E. Keen, A. Mueller, K. Burns. New England Fruit and Vegetable Conference. Manchester, NH. December 14, 2022. Moderator and Organizer. [80 attendees, 2 hours, 160 contact hours]

Cold Chain Management Workshop. Three presentations: Why Good Crops Go Bad: Postharvest Physiology, Keeping Your Cool. Building a Strong Cold Chain with pre-cooling, storage, quality, and safety, and Cleaning and Sanitizing Overview. M. Sullins, M. Ritchie,

C. Callahan. Remote, Colorado State University. December 2, 2022. [16 attendees 2.5 hours, 40 contact hours]

This Is What Produce Safety Looks Like on Our Farm. **C. Callahan** and A. Chamberlin. MOFGA Farmer to Farmer Conference. Belfast, ME. November 7, 2022. [24 attendees, 1.5 hours, 35 contact hours]

Farmer to Farmer Twilight: Precooling and Storage at Harvest Farm. Whately, MA. L. McKeag, G. Gem, S. Schufele, & **C. Callahan**. September 8, 2022. [30 attendees, 2 hours, 60 contact hours.]

SCRUB Project Summary. **C. Callahan**, V. Grubinger, H. Estrin, W. Mitchel, P. Tocco, A. Chamberlin, R. Hadad, T. Wankco. National USDA FSOP Project Directors Meeting. Hybrid. May 25, 2022. Orlando, FL. [54 attendees, 15 minutes, 13.5 contact hours]

NECAFS Summary. **C. Callahan**, E. Newbold, S. Fogarty, A. Fitzgerald. National USDA FSOP Project Directors Meeting. Hybrid. May 25, 2022. Orlando, FL. [54 attendees, 15 minutes, 13.5 contact hours]

Garlic School. C. Stewart, F. Hay, & **C. Callahan**. Cornell Cooperative Extension. Virtual. March 22, 2022. [34 attendees, 2 hours, 68 contact hours]

Cold Pressing Oil: Experiences from Oilseed Crops in the Northeast. **C. Callahan**. Industrial Hemp Conference. Virtual. March 16, 2022. [16 attendees, 1 hour, 16 contact hours]

Produce Safety Alliance Grower Training. E. Newbold, H. Estrin, **C. Callahan**, K. Sweet, A. Chamberlin, T. Diego, O. Cultrara. Module 1 – Introduction to Produce Safety and Module 5.2 Postharvest Agricultural Water. Online via web meeting. March 8&9, 2022. [26 attendees, 8 hours, 208 contact hours]

NECAFS Annual Meeting and Conference. E. Newbold & **C. Callahan**. Virtual. January 18-20, 2022. [80-150 attendees over 3 days, 24 hours, 2,728 contact hours]

2021 Produce Safety Alliance Grower Training. E. Hogdon, **C. Callahan**, L. McDermott, L. Pashow, M. Thurston, S. Card. Module 1 – Introduction to Produce Safety and Module 6 Cleaning and Sanitizing. Online via web meeting. December 8-9, 2021. [26 attendees, 8 hours, 208 contact hours]

Managing High Tunnels and Greenhouses for Temperature and Humidity. MOFGA Farmer to Farmer. A. Chamberlin, P. O'Brien, R. Maden and **C Callahan.** November 5, 2021. [16 attendees, 1.5 hours, 24 contact hours]

Packshed Improvements for Efficiency and Food Safety. MOFGA Farmer to Farmer. A. Chamberlin, P. O'Brien, and **C Callahan**. November 5, 2021. [27 attendees, 1.5 hours, 41 contact hours]

City Rat, Country Rat: Understanding Rats and the Best Practices for Controlling Produce Safety Risks on Urban and Rural Farms. National Farmers Union Stories from the Field. Y. Gonzalez and **C. Callahan**. August 26, 2021. [16 participants, 2 hours, 32 contact hours]

Postharvest Planning for Profit, Efficiency & Food Safety. **C. Callahan**, D. Allen, T. Mendell, D. Paulk, C. Alexander. New Hampshire Fruit and Vegetable Growers Association, Winter Conference, Virtual. March 27, 2021. [60 attendees, 1.5 hours, 90 contact hours]

Cleaning and Sanitizing Workshop Series. E. Bihn, **C. Callahan**, E. Demmings. Virtual. March 11 – April 8, 2021. [43 Attendees, 4 hours, 172 contact hours]

Hemp Drying Basics. **C. Callahan** and G. Schimelpfenig. Online. UVM NW Crops and Soils Industrial Hemp Conference. February 26, 2021. [45 attendees, 1 hour, 45 contact hours]

AZS Rinse Conveyor Users Group Webinar. A. Chamberlin, H. Shirk, **C. Callahan**. Online. February 22, 2021. [12 attendees, 2 hours, 24 contact hours]

Cleaning, Sanitizing, and Disinfecting: Differences, Equipment and Tools for Produce Farms and Packing Houses…and Drains. **C. Callahan**. US Food and Drug Administration, Western Regional Center, National Farmers Union Cleaning and Sanitization Workshop. February 9, 2021. [90 minutes, 20 attendees, 30 contact hours]

Food Safety Concerns in Produce Packing Houses. Sanitary Design of Packing Houses: An Introduction to Hygienic Design for Produce Farms. **C. Callahan**. Mid-Atlantic Fruit and Vegetable Conference. February 8, 2021. [95 attendees, 45 minutes, 71 contact hours]

Designing exclusion netting support systems that provide long term control of SWD and maximum utility for berry farmers. **C. Callahan**. New York Expo – Berry Session. October 19 2020. [84 attendees, 30 minutes, 42 contact hours.]

NECAFS Annual Meeting and Conference. E. Newbold & **C. Callahan**. Virtual. February 16-18, 2021. [75-133 attendees over 3 days, 24 hours, 2,728 contact hours]

2020 Cooler Construction Basics and Temperature and Humidity Control. **C. Callahan** and S. Sanford. Cornell Winter Crop Storage School. Cornell Cooperative Extension. December 8, 2020. [65 attendees, 2 hours, 2 contact hours.]

UVM Extension Horticulture Team Virtual Twilight: Bags, Bins and Liners. **C. Callahan**, H. Estrin, A. Chamberlin. December 2, 2020. [32 attendees, 1 hour, 32 contact hours]

The Post-Harvest Management Team (PHMT): A Case Study in Transdisciplinary Extension Collaboration. **C. Callahan**, G. Nickerson, H. Estrin, M. Cannella, B. Miller, A. Chamberlin, R. Schattman, & J. Brown. UVM Extension Sustainable Ag & Forests Result Area Team Meeting. November 2, 2020. [17 attendees 20 minutes, 6 contact hours.]

Designing exclusion netting support systems that provide long term control of SWD and maximum utility for berry farmers. **C. Callahan**, G. Loeb, & L. McDermott. Northeast Tree Fruit IPM Meeting. October 19, 2020. [46 attendees, 20 minutes, 15 contact hours.]

SWD Netting Structure Overview. Open House at the Berry Patch, Stephentown, NY. October 14, 2020. In-person and telecast as a Zoom meeting. [19 attendees, 2 hours, 38 contact hours.]

Safe and Efficient Hemp Drying. **C. Callahan**, G. Schimelpfenig, L. Morlino, L. Wheeler. NW Crops and Soils / New and Beginning Farmer Hemp Webinar and blog post. August 6, 2020. [28 attendees, 1 hour, 28 contact hours]

Controlling Humidity and Condensation in Coolers. H. Bryant, M Choate, P. Franklin, **C. Callahan**, A. Chamberlin. Virtual Summer Twilight and Video Playlist. UNH Extension and UVM Extension. July 29, 2020. [32 attendees, 2 hours, 64 contact hours]

UVM Extension Horticulture Team Virtual Twilight: Spotted Wing Drosophila. V. Grubinger, R. Maden, **C. Callahan**. July 29, 2020. [18 attendees, 1 hour, 18 contact hours]

Produce Safety Alliance Grower Training. H. Estrin, **C. Callahan**, D. Ruppert, A. Chamberlin, K. Sweet, G. Wall, G. Clithero, T. Diego. Module 3 – Soil Amendments and Module 5.1 Agricultural Water. Online via web meeting. May 5-6, 2020. [11 attendees, 8 hours, 88 contact hours]

AZS Rinse Conveyor Users Group Webinar. **C. Callahan**, A. Chamberlin, H. Shirk. Online. March 5, 2020. [24 attendees, 2 hours, 48 contact hours]

Wegmans Grower Winter Training. Hygienic Design for Produce Farms. **C. Callahan**, A. Chamberlin, E. Newbold, E. Bihn. Rochester, NY. February 25, 2020. [100 attendees, 3 hours, 300 contact hours]

NECAFS Annual Meeting and Conference. E. Newbold & **C. Callahan**. Philadelphia, PA. February 11-13, 2020. [135 attendees, 16 hours, 2,160 contact hours]

Project Planning for Postharvest Efficiency, Profitability & Food Safety. **C. Callahan**, A. Chamberlin, T. Mendell. Pennsylvania Association for Sustainable Agriculture, Winter Conference, Lancaster, PA. February 6, 2020. [60 attendees, 4 hours, 240 contact hours]

Sanitary Design of Packing Houses: Introduction to Hygienic Design for Produce Farms. **C. Callahan.** New Jersey Agricultural Convention and Conference, Atlantic City, NJ. February 5, 2020. [50 attendees, 0.5 hours, 25 contact hours]

2019 FSMA: Irrigation and Produce Safety Update. **C. Callahan**. Northeast Specialty Crop Water Symposium. Davis Center, University of Vermont. December 19, 2019. [30 attendees, 30 minutes, 15 contact hours]

Farmer to Farmer Session: Technology. New England Fruit and Vegetable Conference. **C. Callahan** (Moderator) Manchester, NH. December 12, 2019. [50 attendees, 1 hour, 50 contact hours]

Pre-Cooling and Curing Crops. New England Fruit and Vegetable Conference. **C. Callahan** and A. Chamberlin. Manchester, NH. December 12, 2019. [230 attendees, 30 minutes, 115 contact hours]

Floors, Walls, Bins, and other Postharvest Surfaces. New England Fruit and Vegetable Conference. A. Chamberlin and **C. Callahan** Manchester, NH. December 12, 2019. [150 attendees, 30 minutes, 75 contact hours]

High Tunnels as Systems. New England Fruit and Vegetable Conference. **C. Callahan.** Manchester, NH. December 11, 2019. [230 attendees, 30 minutes, 115 contact hours]

Post-Harvest Handling of Onions & Garlic. New England Fruit and Vegetable Conference. **C. Callahan**. Manchester, NH. December 11, 2019. [100 attendees, 30 minutes, 50 contact hours]

Hygienic Design: Train the Trainer. November 26, 2019. **C. Callahan**. Online. [15 attendees, 2 hours, 30 contact hours]

Washing Machine Greens Spinner Conversion Workshop. A. Chamberlin, **C. Callahan,** H. Estrin, M. Dragon**.** Randolph Technical Career Center, Randolph, VT. November 19, 2019. [11 attendees, 5 hours, 55 contact hours]

Can You Hack It? On-farm Innovations. **C. Callahan** and A. Chamberlin. Maine Organic Farmers and Gardeners Association (MOFGA) – Farmer to Farmer Conference. Northport, ME. November 3, 2019. [25 attendees, 1.5 hours, 48 contact hours]

Techniques & Set-Ups for Washing and Postharvest Handling. A. Chamberlin and **C. Callahan**. Maine Organic Farmers and Gardeners Association (MOFGA) – Farmer to Farmer Conference. Northport, ME. November 3, 2019. [15 attendees, 3 hours, 45 contact hours]

Winter Crops: Handling, Washing, and Storage. **C. Callahan** and A. Chamberlin. Maine Organic Farmers and Gardeners Association (MOFGA) – Farmer to Farmer Conference. Northport, ME. November 3, 2019. [15 attendees, 3 hours, 45 contact hours]

Washing Machine Greens Spinner Conversion Workshop. A. Chamberlin and **C. Callahan.** Maine Organic Farmers and Gardeners Association (MOFGA), Unity, ME. November 1, 2019. [6 attendees, 4 hours, 24 contact hours]

Hops Harvesting and Drying Basics. Presentation and Hands-on Workshop. **C. Callahan.** Farm Scale Hops Production Workshop. Pennsylvania State University, State College, PA. October 21, 2019. [28 attendees, 3 hours, 84 contact hours]

Introduction to Hygienic Design for Produce Farms. **C. Callahan.** North Carolina Produce Safety Task Force, Produce Professionals Conference 2019. Asheville, NC. October 10, 2019. [44 attendees, 1.5 hours, 66 contact hours]

Project Planning for Postharvest Efficiency, Profitability & Food Safety. **C. Callahan**, H. Estrin, A. Chamberlin. T. Mendell, J. Mendell, L. Bulger, & B. Shervin. Footprint Farm, Starksboro, VT. August 21, 2019. [20 attendees, 4 hours, 80 contact hours]

Ventilation in Greenhouses and High Tunnels. **C. Callahan**. NOFA MA Summer Conference. Hampshire College, Amherst, MA. August 11, 2019. [12 attendees, 1.5 hour, 18 contact hours]

Project Planning for Postharvest Efficiency, Profitability & Food Safety. **C. Callahan**, H. Estrin, A. Chamberlin. L. McDermott, C. Stewart, E. Hodgdon, S. Arnold, P. Arnold, R. Arnold, & K. Atkins. Pleasant Valley Farm. Argyle, NY. August 1, 2019. [20 attendees, 4 hours, 80 contact hours]

Produce Safety Alliance Grower Training. **C. Callahan**, E. Hodgdon, L. McDermott, A. Finley, M. Basedow, & L. Pashow. Lead Trainer, Module 1 – Introduction to Produce Safety, and Module 5.1 Agricultural Water. Warrensburg, NY. July 15, 2019. [16 attendees, 8 hours, 128 contact hours]

Building a One-Way Street: Backflow Prevention Strategies for Produce Farms. **C. Callahan**. Webinar. May 20, 2019. Role: Creator and Lead Instructor. [65 attendees, 1 hour, 65 contact hours]

Sanitary Design and Practice Considerations. **C. Callahan**, R. Hadad, E. Bihn, E. Demmings, A. Chamberlin. Cornell AgriTech. Geneva, NY. March 27, 2019. Role: Lead Course Developer, Instructor for sections on drying, hygienic design, and hands-on activity related to equipment evaluation. [30 attendees, 7 hours, 210 contact hours]

Produce Safety Alliance Grower Training. **C. Callahan**, H. Estrin, A. Chamberlin, K. Sweet, D. Giroux, T. Diego. Lead Trainer, Module 1 – Introduction to Produce Safety, and Module 5.2 Postharvest Agricultural Water. Middlebury, VT. March 19, 2019. [20 attendees, 8 hours, 160 contact hours]

Postharvest Handling and Storage. H. Estrin, & A. Chamberlin. **C. Callahan**: Curricular content support. NOFA-VT Winter Conference, Burlington VT. February 16, 2019. [19 attendees, 6 hours, 114 contact hours]

NECAFS Annual Meeting and Conference. E. Newbold & **C. Callahan**. Albany, NY. February 5-7, 2019. [120 attendees, 16 hours, 1,920 contact hours]

Postharvest Handling and Storage. **C. Callahan**, H. Estrin, & A. Chamberlin. Vermont Vegetable and Berry Growers Annual Meeting. Fairlee, VT. January 22, 2019. [19 attendees, 6 hours, 114 contact hours]

The New Frontiers in Garlic Production. Half-Day Intensive. C. Stewart, E. Fraser, B. Fox, & **C. Callahan** (Postharvest handling.) NOFA-NY Winter Conference. Saratoga Springs, NY. January 19, 2019. [49 attendees, 3 hours, 147 contact hours]

Wash Lines to Storage Buildings Intensive: Post-Harvest Construction Projects. Half-Day Intensive. **C. Callahan**, E. Fellenz, L. MacDougall, D. Kent, T Mendell, & J. Mendell. NOFA-NY Winter Conference. Saratoga Springs, NY. January 19, 2019. [56 attendees, 3 hours, 168 contact hours]

2018 The Northeast Center to Advance Food Safety: An Overview. **C. Callahan** and E. Newbold. New York State Association for Food Protection (NYSAFP) Annual Meeting. Syracuse, NY. [32 attendees, 1 hour, 32 contact hours]

High Tunnel Twilight. H. Bryant, R. Sideman, G. Hamilton, **C. Callahan.** UNH Farm. N. Haverhill, NH. August 15, 2018. [20 attendees, 2 hours, 40 contact hours]

Allium Twilight. **C. Callahan**, C. Stewart, H. Prussack. High Meadows Farm. July 12, 2018. [25 attendees, 3 hours, 75 contact hours]

Postharvest Practices in Berries. **C. Callahan**. Northeast Berry Call. June 12, 2018. Webinar.

Produce Safety in Broccoli. **C. Callahan** and E. Bihn. May 14, 2018. Webinar. [36 attendees, 1 hour, 36 contact hours]

Excelling with Excel. **C. Callahan** and G. Deziel. UVM Extension Professional Improvement Conference. Woodstock, VT. May 9, 2018. [40 attendees, 1 hour, 40 contact hours]

Web Meetings that Work. **C. Callahan** and M. Tracy. UVM Extension Professional Improvement Conference. Woodstock, VT. May 8, 2018. [30 attendees, 1 hour, 30 contact hours]

Wash / Pack Design Workshop. Hardwick, VT. D. Keeney, H. Estrin, A. Chamberlin, **C. Callahan**. April 12, 2018. [40 attendees, 1 hour, 40 contact hours]

Produce Safety Alliance Grower Training. Module 5.2 Postharvest Agricultural Water. St. Johnsbury, VT. April 11, 2018. [40 attendees, 1 hour, 40 contact hours]

National Coordination Center (NCC) Training Advisory Council (TAC). Albuquerque, NM. February 1, 2018. [30 attendees, 12 hours, 360 contact hours]

Overview of the Northeast Center to Advance Food Safety (NECFAS). **C. Callahan**. Sunrise Session - Manufactured Foods Regulatory Professional Association (MFRPA). Albuquerque, NM. February 1, 2018. [120 attendees, 1 hour, 120 contact hours]

NECAFS Steering Team Meeting. Baltimore, MD, January 25, 2018 [26 attendees, 4 hours, 204 contact hours]

NECAFS Annual Meeting and Conference. Baltimore, MD. January 23-24, 2018. [130 attendees, 16 hours, 2,080 contact hours]

Growing, Washing & Packing High Tunnel Winter Greens: Doing It and Doing It Well. **C. Callahan**, J. Reid, R. Hadad, P. Arnold, K. Arnold, & S. Arnold. NOFA-NY Winter Conference. Saratoga Springs, NY. January 18, 2018. [40 attendees, 7 hours, 280 contact hours]

2017 Infrastructure Design with the FSMA Produce Safety Rule on the Mind. **C. Callahan**. New England Vegetable and Fruit Conference. Manchester, NH. December 14, 2017. [140 attendees, 45 minutes, 106 contact hours]

Postharvest Handling Can Improve Fresh Market Success. **C. Callahan**. New England Vegetable and Fruit Conference. Manchester, NH. December 14, 2017. [70 attendees, 45 minutes, 53 contact hours]

Postharvest Cooling and Curing. **C. Callahan**. New England Vegetable and Fruit Conference. Manchester, NH. December 13, 2017. [320 attendees, 45 minutes, 240 contact hours]

Postharvest Handling and Storage for Small Farms. **C. Callahan**. Great Lakes Expo. Grand Rapids, MI. December 7, 2017. [30 attendees, 45 minutes, 23 contact hours]

Produce Safety Recordkeeping: Requirements and Tools. **C. Callahan**. Great Lakes Expo. Grand Rapids, MI. December 7, 2017. [50 attendees, 30 minutes, 25 contact hours]

Practical Produce Safety in Coolers. **C. Callahan**. Great Lakes Expo. Grand Rapids, MI. December 5, 2017. [100 attendees, 30 minutes, 50 contact hours]

Winter Crop School. C. Stewart, C. Bornt, J. P. Courtens, **C. Callahan**. Cornell Cooperative Extension. Saratoga Springs, NY. November 30, 2017. [60 attendees, 6 hours, 360 contact hours]

Pre-Cooling and Curing. A Farmer-to-Farmer Workshop. **C. Callahan** & B. Hopkins. Maine Organic Farmers and Gardeners Association. Northport, ME. November 6, 2017. [30 attendees, 3 hours, 90 contact hours]

Introduction to Farm Energy Analysis: A Workshop for Users of Energy Audits. **C. Callahan**, A. J. Both, T. Manning, and D. Ciolkosz. Rutgers EcoComplex, Bordentown, NJ. August 22-24, 2017. [13 attendees, 20 hours, 260 contact hours]

Food Hub Management Certificate Program. The University of Vermont. CENC_FHMCP101. **C. Callahan**. Instructor for Technology Module. April 17, 2017. [30 participants, 1-hour class, average of 1 hour outside of class – 60 contact hours]

New Farming Technology from Sweden. **C. Callahan** & S. Johnson. UVM Extension NWCS Team NGGA Winter Grains Conference. March 23, 2017. Essex, VT. [60 attendees, 1 hour. 60 contact hours]

NECAFS Steering Team Meeting. Project PI and Meeting Organizer. January 11, 2017. Boston, MA. [30 attendees, 4 hours. 120 contact hours]

Northeast Regional Food Safety Symposium: A Joint Meeting of NECAFS and NEASDA. January 10, 2017. Boston, MA. Program Organizer and Host. [70 attendees, 6 hours. 560 contact hours]

2016 Produce Safety Alliance: Food Safety Modernization Act (FSMA) Produce Safety Rule Train the Trainer Course. With the Produce Safety Alliance. November 16, 2016. Brattleboro, VT. [60 attendees. 8 hours. 480 contact hours]

Crop Storage: Maximizing long term crop storage through innovations in technology (and some good old-fashioned basic principles.) **C. Callahan**. UNH Extension Northern Growers Conference. October 26, 2016. Whitefield, NH. [110 attendees. 1 hour. 110 contact hours]

Regional Round Table Webinar: A Virtual Poster Session for 18 Regional Food Safety Projects in the Northeast. Part of the Northeast Center to Advance Food Safety (NECAFS). With E. Newbold. October 16, 2016. [30 participants, 1.5 hour, 45 contact hours].

The Power and Perils of Partnerships. **C. Callahan.** UVM Extension Fall Program Meeting. September 27, 2016. S. Royalton, VT. [50 participants, 1 hour, 50 contact hours]

NECAFS Webinar: Lessons Learned in State Collaborations on Food Safety. Part of the Northeast Center to Advance Food Safety (NECAFS). With E. Newbold and the Produce Safety Alliance. September 19, 2016. [82 participants, 1.0 hour, 82 contact hours].

Food Hub Management Certificate Program. The University of Vermont. CENC_FHMCP101. **C. Callahan.** Instructor for Technology Module. May 9. [26 participants, 1-hour class, average of 1 hour outside of class – 78 contact hours]

Basics of Drying Principles and Systems. **C. Callahan.** Farmer Workshop. For the Vermont Medicinal Herb Cooperative. April 29. Warren, VT. [9 participants, 2 hours each – 18 contact hours]

Winter Growing in Cold Climates. **C. Callahan** & C. Pierce. Farmer Workshop. Funded by Vermont Technical College. February 22-23. Shelburne, VT. [14 participants, 12 hours each – 168 contact hours]

2015 Food Storage. Farmer to Farmer Workshop. Maine Organic Farmer and Growers Association (MOFGA) Farmer to Farmer Conference. November 5, 2015. LincolnVille, ME. [40 participants, 2 hours each – 80 contact hours]

Postharvest Quality: A Workshop for the Vermont Gleaning Collective. September 2, 2015. Middlebury, VT. [15 participants, 1.5 hours – 22.5 contact hours]

Food Hub Management Certificate Program. The University of Vermont. CENC_FHMCP101. Instructor for Technology Module. [21 participants, 1-hour class, average of 2 hours outside of class – 63 contact hours]

Farm Energy IQ – Biodiesel and Straight Vegetable Oil Module. Training modules for both farmers and agricultural service providers developed under a multi-state NE-SARE project #ENE12-128. [50 participants, 24 hours – 1200 contact hours]

2014 Crop Storage. Webinar. Condensed version of the longer workshop series from the Fall. [30 participants, 1.0 contact hours each – 30 contact hours].

Crop Storage. Workshop Series. October 14 - Middlebury, VT. October 21 – Berlin, VT. Curriculum development and workshop delivery. One-day workshops focused on improved understanding of long-term fruit and vegetable storage and general temperature and humidity control in storage. [30 participants, 3.5 contact hours each – 105 contact hours]

Greenhouse Energy Extravaganza. One-day multi track session coordinated by M. Skinner of UVM Entomology Lab. September 4, 2014. [60 participants, 1.0 contact hour each, 60 contact hours.]

On-Farm Oilseed Pressing for Fuel and Food. Webinar as part of the NEWBio Program. April 8, 2014. [26 participants, 1.0 contact hour each, 26 contact hours]

Guest Lecture: Energy in the Food System. CDAE ENVS-295: The Real Cost of Food. With E. Garza 11/4/2014. [20 students, 1.0 contact hour each – 20 contact hours]

Crop Storage. Workshop Series. Invited delivery of a five-day workshop series in five locations throughout the Atlantic Canadian Provinces (NB, PEI, NS). Curriculum based upon the 2013 Fall series in Vermont. [130 participants, 6.5 contact hours each – 845 contact hours]

Engineering Challenges and Solutions in Vermont's Food System. College of Engineering, Math and Science, Civil and Environmental Engineering Department. Seminar. 1/31/2014. [30 faculty peers, 1.0 contact hour each – 30 contact hours]

Guest Lecture: Alternative Energy and Energy Efficiency in Greenhouses. CALS PSS-127: Greenhouse Operations and Management. With C. Armstrong. 1/29/2014. [20 students, 1.0 contact hour each – 20 contact hours]

2013 Designing a Good Storage System: An Engineer's Perspective. Presenter and member of a panel discussion at 2014 New England Fruit and Vegetable Conference. Manchester, NH. December 18, 2013. [325 participants, 0.75 contact hours each – 244 contact hours]

Guest Lecture: Energy in the Food System. CDAE ENVS-295: Energy Use in US Food Systems. With E. Garza. 11/11/2013. [20 students, 1.0 contact hours each – 20 contact hours]

Crop Storage. Webinar for New Farmers. Condensed version of the longer workshop series from the Fall. [30 participants, 1.0 contact hours each – 30 contact hours]

Crop Storage. Workshop Series. Curriculum development and workshop delivery. April 2013-March 2015. One-day workshops focused on improved understanding of long-term fruit and vegetable storage and general temperature and humidity control in storage. [72 participants, 6.5 contact hours each – 468 contact hours]

Greenhouse and High Tunnel Tour. Winter 2012/Spring 2013. Farmer to Farmer field education program focused on greenhouse and high tunnel selection, design and operation. Tour was developed into a video archive jointly with NOFA-VT for broad distribution via YouTube. [7 videos, 4 hours total, 507 views as of 3/5/2014]

Technological Challenges & Solutions for Food Businesses. Moderation of Roundtable Discussion at the 2013 National Farm Viability Conference. September 27, 2013. Middlebury, VT.

Practical Produce Safety Workshop. Storage Component. April 11, 2013. Vergennes, VT. [30 participants, 1.0 contact hours each - 30 contact hours]

Vermont Vegetable and Berry Growers Association Annual Meeting. "Storing Your Crops: Tips and Tools for Success." January 28, 2013. Montpelier, VT. [200 participants, 0.5 contact hours each – 100 contact hours]

2012 Oilseed, Meal, Oil and Biodiesel Quality Best Practices. Annual VT Oilseed Growers Meeting. Berlin, VT. [12 attendees, 1 hour, 12 contact hours]

2011 The UVM Mobile Hop Picker. NEHA Annual Conference. November 5, 2011. Troy, NY. [100 attendees, 30 minutes, 50 contact hours]

Hop Harvester Showcase. September 7, 2011. Borderview Farm, Alburgh, VT. [50 attendees, 30 minutes, 25 contact hours]

Hop Field Day and Open House. August 25, 2011. Four Star Farm, Northfield, MA. [50 attendees, 30 minutes, 25 contact hours]

Field Day and Open House. Oilseed Pressing and Biodiesel. August 4, 2011. Borderview Farm, Alburgh, VT. [50 attendees, 30 minutes, 25 contact hours]

INVITED PRESENTATIONS

2020 Designing exclusion netting support systems that provide long term control of SWD and maximum utility for berry farmers. New England, New York and Canadian Fruit Pest Call. October 19, 2020. [10 min, 79 attendees, 13 contact hours]

2019 Wired (Panel). Southern Vermont Economy Summit. May 23, 2019. West Dover, VT. [30 attendees, 1 hour, 30 contact hours]

The Magic of Postharvest in the Culinary World. Blue Hill at Stone Barns Center for Agriculture. March 21, 2019. Pocotino Hills, NY.

2015 Harvesting and Drying Hops. New England Vegetable and Fruit Conference. December 17, 2015. Manchester, NH.

Ideas for Harvest and Handling from California. New England Vegetable and Fruit Conference. December 15, 2015. Manchester, NH.

On-farm Biodiesel: A Decade of Experience in Vermont. 2015 National Extension Energy Summit. April, 2015. Seattle, WA.

Heating Greenhouses with Biomass in Vermont: A Learning Community. 2015 National Extension Energy Summit. April, 2015. Seattle, WA.

The NOFA VT Winter Conference. “Why Good Vegetables Go Bad.” February 14, 2015. Burlington, VT.

The Ohio State University Hops Conference. “Hops Harvesting Round-up and Drying: Scale and Technique for Quality.” February 6, 2015. Wooster, OH.

New England Certified Crop Advisors Training. “Energy in Agriculture: Where Are We?.” February 4, 2015. Portsmouth, NH.

New England Certified Crop Advisors Training. “Converting Oilseeds to Biodiesel” February 4, 2015. Portsmouth, NH.

Vermont Vegetable and Berry Growers Association Annual Meeting – Special Postharvest Conference. “Crop Storage Top Ten” January 21, 2015. Fairlee, VT.

Maine Vegetable and Small Fruit Growers Association Annual Meeting. “Postharvest Practices for Quality and Safety.” January 13, 2015. Augusta, ME.

2014 Northeast Hops Alliance, Annual Meeting and Conference. “Harvesting and Beyond” December 6, 2014. Morrisville, NY.

New England Extension In-Service. “Food Hubs, Technology & Extension.” October 28, 2014. Northwood, NH.

Farm to Plate Network Gathering. “Deep Dive Roundtable: Farm Viability.” October 23, 2014. Killington, VT.

Vermont Oilseed Producers Meeting. “Oilseed Economics: Overview of Production Economics with Historical & Current Conditions.” March 3, 2014. Burlington, VT.

Vermont Oilseed Producers Meeting. “Final Report: Small Scale Oilseed Press Evaluations.” March 3, 2014. Burlington, VT. With Hannah Harwood.

2013 Northeast Hops Alliance, Annual Meeting and Conference. "Hops Harvesters: What's Out There?" December 2013. Morrisville, NY.

Vermont Quebec Bioenergy Challenge. Cross border forum concerning opportunities and commonalities among Vermont communities and those of the Eastern Townships of Quebec. Topic presented was Farm-Scale Biofuels. October 26, 2013. Sherbrooke, QC.

Vermont Oilseed Producers Meeting. "Small Scale Oilseed Press Evaluations: Preliminary Test Results. March 19, 2013. Berlin, VT.

Northeast Hops Alliance, Maryland Hops Conference. "The UVM Mobile Hops Harvester and Modular Oast." March 8, 2013. Frederick, MD.

UVM Winter Hops Conference. "The UVM Mobile Hops Harvester and Modular Oast." February 22, 2013. Essex, VT.

2012 Northeast Hops Alliance, Annual Meeting and Conference. "The UVM Mobile Hops Harvester and Modular Oast." December 1, 2012. Morrisville, NY.

Annual Crops and Soils Field Day. UVM Extension Alburgh Field Research Farm. Alburgh, VT. August 9, 2012. Supported similar events at Four Star Farm in Northfield, MA on August 25, 2012 and at Borderview Farm in Alburgh, VT on September 7, 2011.

2011 Vermont Oilseed Producers Meeting. "The Oilseed Cost and Profit Calculator." February 15, 2011. Berlin, VT.

2010 Northeast Agricultural Energy Conference. "On-farm Biodiesel Safety." Manchester, NH. March 16, 2010.

Northeast Agricultural Energy Conference. "Greenhouse Energy Efficiency and Renewable Energy Practices." Manchester, NH. March 16, 2010.

MENTORING

2019 Cambridge Central School Senior – J. Boyne. Digital Pump Hour Meter with Cloud-based Data Recording. Unpaid Intern. November 2019 - Present.

Agricultural Engineering Summer Internship. R. Buckley. Mixed Scope Engineering Internship Focused on Programming, Automation, and Electromechanical Systems. Paid Intern. May 2019 – June 2020.

2018 UVM Food Systems Graduate Program – S. Lyman (formerly Tichonuk.) "UVM Extension Data Visualization Needs Assessment." Masters: Food Systems. May 2019.

2016 Guide to Professional Licensure. Panel at 2016 ASABE Annual Meeting. Orlando, FL. Sponsored by the Young Professionals Council (YPC) and Professional Engineers Institute (PEI).

2015 Senior Experience in Engineering Design (SEED) ME185 Team Mentor –. Greenhouse and High-Tunnel Environmental Control Automation System. T. O'Neill, C. Ray, E. Melloni, A. Towle.

2014 Senior Experience in Engineering Design (SEED) ME185 Team Mentor – C. Millar, M. Lane, H. Duncan. Small Scale Egg Washing Device.

2013 Agricultural Engineering Intern – S. Rossier. Provided mentorship and developmental opportunities for a recent high school graduate entering engineering school in the Fall. Paid Intern. Summer 2013.

SCHOLARSHIP

PUBLICATIONS & PRESENTATIONS

OUTREACH & EXTENSION PUBLICATIONS

Extension Publication Summary

Year	Publications	New	Revised
2025	4	4	0
2024	7	7	0
2023	13	13	0
2022	26	18	8
2021	15	12	3
2020	17	15	2
Total past 5 years	65	54	11
Avg past 5 years	13	11	2
Total since 2010	157	143	14

2025 S. Fogarty, E. Newbold, **C. Callahan**, L. George, R. Machado, S. Sirsat, E. Bihn. Produce Safety Alliance Grower Training: Tailored Curriculum with Aquaponic and Hydroponic Supplements. May 19, 2021.

A. Chamberlin & **C. Callahan**. A Fork in the Road: Outgrowing the Packshed at Crossroad Farm. Blog Post, Video, and 360 Degree Farm Tour. February 26, 2025.

A. Chamberlin & **C. Callahan**. Metal Building in a Week: Scaling up at McDonald Farmstand. Blog Post, Video, and 360 Degree Farm Tour. February 18, 2025.

S. Fogarty, E. Newbold, **C. Callahan**, E. Bihn, L. George, R. Machado, S. Sursat. Glossary of Aquaponic and Hydroponic Produce Safety Terms. Webpage and PDF. February 10, 2025.

2024 A. Chamberlin & **C. Callahan.** Beating Beetles Better: Mechanically Controlling Colorado Potato Beetle. Blog Post and Videos. December 13, 2024.

A. Chamberlin & **C. Callahan.** The BarnHouse: Optimized for Modern Day Vegetable Farming at Footprint Farm. 360 Degree Farm Tour. November 11, 2024.

A. Chamberlin and **C. Callahan**. Giving a Dairy Barn New Life at New Leaf Organics.360 Degree Farm Tour. Added November 11, 2024.

R. Maden, **C. Callahan**, V. Grubinger, & A. Chamberlin. A Guide to Preparing High Tunnels for Extreme Weather. Blog Post and PDF Fact Sheet. August 13, 2024.

A. Chamberlin and **C. Callahan**. Shipping Container Delivers the Goods for Ascutney Harvest. Blog Post, 360 Degree Virtual Farm Tour and Video. June 6. 2024.

A. Chamberlin and **C. Callahan**. Planning Tames the Postharvest Beast at Wild Work Farm. Blog Post, 360 Degree Virtual Farm Tour, and Video. June 6. 2024.

C. Callahan, A. Chamberlin, S. Fogarty, and E. Newbold. Legacy Greens Case Study. Web and Video. April 3, 2024.

C. Callahan and A. Chamberlin. Reinventing the Wheel: Easing Movement and Adding Flexibility. Blog Post. January 5, 2024.

2023 A. Chamberlin and **C. Callahan**. Safely Dispensing Sanitizers. Video. October 13, 2023.

A. Chamberlin and **C. Callahan**. What is an Appropriate Detergent for Farm Use? Video. October 13, 2023.

A. Chamberlin and **C. Callahan**. The Four Steps to Cleaning & Sanitizing on Produce Farms. Video. October 13, 2023.

A. Chamberlin and **C. Callahan**. How to Use Sanitizers on a Produce Farm. Video. October 13, 2023.

A. Chamberlin and **C. Callahan**. Farmer's Favorites: Univerco Barrel Washer. Blog Post and Video. June 18, 2023.

C. Callahan and A. Chamberlin. Farmer's Favorites: Shipping Containers and Their Use on Vegetable Farms. Blog Post. May 26, 2023

A. Chamberlin and **C. Callahan**. Expanding Infrastructure and Maximizing its Potential at Jericho Settlers Farm. Blog Post. May 18, 2023

A. Chamberlin and **C. Callahan**. Natural Light in the Packshed at High Meadows Farm. Blog Post. May 15, 2023.

C. Callahan. Top 5: Working with Contractors on a Postharvest Project. Blog Post. March 16, 2023.

C. Callahan. Managing Humidity and Condensation in Coolers. Blog Post. March 1, 2023.

C. Callahan. Duijndam Machines – Used Equipment from Europe. Blog Post. February 2, 2023.

D. Riggs, **C. Callahan**, G. Loeb, L. McDermott. Protecting Berry Crops from Invasive Pests with Exclusion Netting. Scientia. January 12, 2023.

2022 A. Chamberlin & **C. Callahan**. Easy, Breezy, Three Season Packshed at Stout Oak Farm. Blog Post and Video Case Study. December 9, 2022.

A. Chamberlin & **C. Callahan**. New Metal Building from Scratch at Hall Brook Farm. Blog Post, 360 Degree Tour, and Video Case Study. December 7, 2022.

C. Sams, S. Sargent, J. Davis, **C. Callahan**, J. Eccleston, & T. Bjorkman. Cooling Methods for Broccoli: A Guide for Eastern Growers. University of Tennessee Extension. PB 1904. August 24, 2022.

A. Chamberlin and **C. Callahan**. The Next Chapter: Renovating a Barn to Sustain Indian Line Farm. Blog Post and Video Case Study. August 22, 2022.

C. Callahan and G. Schimelpfenig. Drying and Curing Herbs and Flowers (Hops, Hemp, and Everything Else!) Blog Post. July 26, 2022 revision of February 23, 2021 publication.

C. Callahan, B. Mitchell, P. Tocco, A. Chamberlin. Detergents for Farm Food Contact Surfaces. Blog Post. June 26, 2022.

C. Callahan, B. Mitchell, P. Tocco, A. Chamberlin. "Dry Cleaning" on Produce Farms: Alternatives to Water and Detergents. Blog Post. June 22, 2022.

A. Chamberlin & **C. Callahan**. Farmer's Favorites: Cleaning Tools. June 10, 2022.

P. Tocco, **C. Callahan**, H. Borden & A. Work. Michigan State University Online Produce Safety Supervisor Training. Food Safety Resource Clearinghouse. June 1, 2022.

C. Callahan. Exclusion Netting for Spotted Wing Drosophila (SWD). Ag Engineering Blog Post. May 10, 2022.

C. Callahan. Calculating Greenhouse and High Tunnel Heat Loss. Ag Engineering Blog Post. April 19, 2022 revision of April 1, 2015 publication.

A. Chamberlin & **C. Callahan**. Patient Pursuit of Packshed Happiness at Ananda Gardens. February 25, 2022.

C. Callahan, H. Estrin, A. Chamberlin. Planning an Efficient and Safe Wash/Pack Area. Blog Post. February 18, 2022 revision of February 9, 2020 publication.

C. Callahan. Starting-up Heaters without Getting Burned – Greenhouse and High Tunnel Heater Safety Checks. Blog Post. February 18, 2022.

C. Callahan and A. Chamberlin. Greens Spinners for Farm Use. Blog Post and Fact Sheet. February 8, 2022 revision of April 16, 2020 publication.

C. Callahan. Safely Dispensing Sanitizers. Blog Post. February 15, 2022 revision of December 15, 2020 publication.

A. Chamberlin & **C. Callahan**. Portable Handsfree Handwashing Station. Video. January 26, 2022.

C. Callahan. Thermostats for Agriculture. Ag Engineering Blog Post. January 25, 2022 revision of May 3, 2016 publication.

C. Callahan. Preventing Freezing in Produce Coolers. Blog Post. January 25, 2022.

C. Callahan and A. Chamberlin. Rats (and Other Rodents). Fact sheet and Bog Post. January 21, 2022 revision October 9, 2017 publication.

C. Callahan. Getting Started with Growth Chambers. Blog Post. January 14, 2022 revision of March 12, 2019 publication.

2021 A. Chamberlin & **C. Callahan**. Root Washing Systems for Produce Farms. Blog Post. December 16, 2021.

C. Callahan. Warm Rooms for Storage Crops & Freeze Protection for Coolers. Blog Post. November 29, 2021.

C. Callahan. Ventilation in Greenhouses and High Tunnels. Blog Post. November 5, 2021 revision of August 14, 2019 publication.

A. Chamberlin and **C. Callahan**. Building a Better Greens Bubbler. Blog Post, Fact Sheet and Video. October 6, 2021.

C. Callahan & A. Chamberlin. Farm Cooler Checklist. Blog Post and Fact Sheet. September 21, 2021 revision of April 17, 2017 publication.

A. Chamberlin & **C. Callahan**. Cleaning Tools for Produce Farms. Blog post, YouTube Video Series and Guidesheet. August 26, 2021.

C. Callahan. Repairing Cracks and Pits in Concrete Floors. Blog post, Guidesheet and YouTube Video Series. August 4, 2021.

A. Chamberlin & **C. Callahan.** Bins, Buckets, Baskets & Totes. Blog Post. May 28, 2021 revision of January 23, 2019 publication.

C. Callahan, A. Chamberlin, D. Riggs, G. Loeb, S. Hesler, L McDermott, N. Field, G. Blanchette. Installing Improved Exclusion Netting System at The Berry Patch. YouTube Video Series. May 18, 2021.

C. Callahan. Adapter for Driving Earth Anchors with an Earth Auger. Design Sheet. May 18 2021.

A. Chamberlin and **C. Callahan**. Sharpening the Edges: Wash/Pack Efficiencies in a New Farm Building at Small Axe Farm. Blog Post, Fact Sheet and Video Case Study. April 23, 2021.

C. Callahan and G. Schimelpfenig. Drying and Curing Herbs and Flowers (Hops, Hemp, and Everything Else!) Blog Post. February 23, 2021.

A. Chamberlin, H. Shirk, **C. Callahan**. AZS Rinse Conveyor User's Guide. Guide Sheet. February 22, 2021.

C. Callahan. Sanitary Design of Packing Houses: An Introduction to Hygienic Design for Produce Farms. Video playlist recorded from workshop curriculum. 7 videos, 50 minutes. February 8, 2021.

2020 **C. Callahan**. Safely Dispensing Sanitizers. Blog Post. December 15, 2020.

C. Callahan. Shedding Some Light in the Shed - Lighting for Indoor Work on the Farm. Blog Post. November 23, 2020.

A. Chamberlin and **C. Callahan**. Giving a Dairy Barn New Life at New Leaf Organics. Blog Post, Fact Sheet and Video Case Study. September 30, 2020.

C. Callahan. Safe and Efficient Drying of Hemp. Blog Post. August 6, 2020.

A. Chamberlin and **C. Callahan**. Washing Machine Greens Spinners: Cleaning Tips. Blog Post. July 6, 2020.

A. Chamberlin and **C. Callahan**. Spray Tables for Produce Farms. Blog Post. June 2, 2020.

C. Callahan and A. Chamberlin. Improving Handwashing Stations. Blog Post and Fact Sheet. June 9, 2020.

C. Callahan and A. Chamberlin. Drains for Produce Farms. Blog Post and Fact Sheet. April 23, 2020.

C. Callahan and A. Rodriguez. Trench Drain for Vegetable Wash and Pack. Construction Drawing. April 23, 2020.

C. Callahan and A. Chamberlin. Greens Spinners for Farm Use. Blog Post and Fact Sheet. Updated April 16, 2020.

C. Callahan. A Guide to Cleaning, Sanitizing, and Disinfecting for Produce Farms. With review and input from team members of the Produce Safety Alliance (Cornell University), H. Estrin (UVM Extension), L. McKeag (UMass Extension), P. Tocco (Michigan State University), A. Hultberg (University of Minnesota). Blog Post and Factsheet. March 30, 2020. Revised April 16, 2020.

A. Work, P. Tocco, and **C. Callahan**. Hygienic Design on Produce Farms. Video. In collaboration with Michigan State University Produce Safety Team. April 6, 2020.

P. Tocco and **C. Callahan**. Risks Posed by Cats on Produce Farms. Fact Sheet. Michigan State University and UVM Extension. March 14, 2020.

C. Callahan, H. Estrin, V. Grubinger, T. Diego, A. Chamberlin, R. Madden. Considerations for Fruit and Vegetable Growers Related to Coronavirus & COVID-19. Blog Post and Podcast. March 13, 2020. Updated March 18, 2020.

C. Callahan, H. Estrin, A. Chamberlin. Planning an Efficient and Safe Wash/Pack Area. Blog Post (also published jointly on the High Mowing Seeds Blog, "The Seed Hopper"). February 9, 2020.

2019 **C. Callahan**, E. Bihn, and A. Chamberlin. Hygienic Design for Produce Farms. Fact Sheet and Evaluation Checklist. February 9, 2020. Revision.

A. Chamberlin and **C. Callahan**. Washing Machine Greens Spinner Conversion Standard Operating Procedure – Speed Queen. Fact Sheet. November 9, 2019.

A. Chamberlin and **C. Callahan**. Washing Machine Greens Spinner Conversion Standard Operating Procedure – Whirlpool. Fact Sheet. November 9, 2019.

A. Chamberlin and **C. Callahan**. Washing Machine Greens Spinner Shopping Advice. Blog Post. October 17, 2019.

C. Callahan. Ventilation in Greenhouses and High Tunnels. Blog Post. August 14, 2019

A. Chamberlin and **C. Callahan**. Wheels Keep Things Moving at Root 5 Farm. Blog Post, Fact Sheet, and Video Case Study. August 2, 2019.

A. Chamberlin and **C. Callahan**. All About Alliums: Twilight Meeting Video Recording. July 30, 2019.

C. Callahan and A. Chamberlin. Forced Air Cooling: Field Trials. Blog Post and Fact Sheets. June 18, 2019.

C. Callahan and A. Chamberlin. Hygienic Design for Produce Farms. Blog Post and Fact Sheet. May 30, 2019.

C. Callahan. Backflow Prevention for Produce Farms. Blog Post. May 20, 2019.

C. Callahan. Hygienic Design Checklist - On-Farm Equipment and Buildings Used for Handling and Washing Produce. Excel based checklist. April 28, 2019.

A. Chamberlin & **C. Callahan.** Last Resort Farm Not Stalled by Dairy Barn Conversion for Produce. PDF Case Study. April 25, 2019.

A. Chamberlin & **C. Callahan.** Last Resort Farm Not Stalled by Dairy Barn Conversion for Produce. Blog Post. April 25, 2019.

C. Callahan & A. Chamberlin. Staying Ahead in the Packshed: Postharvest Topics, Sources of Information, and Ideas from Growers. Blog Post, Survey Summary. March 13, 2019.

C. Callahan. Getting Started with Growth Chambers. Blog Post. March 12, 2019.

A. Chamberlin & **C. Callahan**. Vegetable Wash Sinks, Tanks, Tubs and Basins: Upgrades for Efficiency and Ergonomics. Blog Post. February 21, 2019.

A. Chamberlin & **C. Callahan**. Cooler Construction Options – Walls and Panels. Blog Post. January 24, 2019.

C. Callahan & A. Chamberlin. Hanging Hoses. Blog Post. January 23, 2019.

A. Chamberlin & **C. Callahan.** Bins, Buckets, Baskets & Totes. Blog Post. January 23, 2019.

A. Chamberlin & **C. Callahan.** Last Resort Farm: Post Harvest Case Study (Video Series). Video Case Study. January 9, 2019.

2018 A. Chamberlin & **C. Callahan.** The BarnHouse: Optimized for Modern Day Vegetable Farming at Footprint Farm. Video Case Study. December 21, 2018.

A. Chamberlin & **C. Callahan.** The BarnHouse: Optimized for Modern Day Vegetable Farming at Footprint Farm. PDF Fact Sheet Case Study. December 21, 2018.

A. Chamberlin & **C. Callahan.** The BarnHouse: Optimized for Modern Day Vegetable Farming at Footprint Farm. Blog Post. December 21, 2018.

A. Chamberlin & **C. Callahan.** Mighty Clean and Comfortable – A New Wash and Pack Shed at Mighty Food Farm. Video Case Study. December 21, 2018.

C. Callahan. Mighty Clean and Comfortable – A New Wash and Pack Shed at Mighty Food Farm. PDF Fact Sheet Case Study. December 21, 2018.

C. Callahan. Mighty Clean and Comfortable – A New Wash and Pack Shed at Mighty Food Farm. Blog Post. December 21, 2018.

C. Callahan. Briquetting a Better, Burnable Cow Patty. Blog Post. December 9, 2018.

C. Callahan. Storing the Bounty: Handling and Storage of Produce after Harvest. Blog Post for High Mowing Organic Seeds Blog. November 10, 2018.

C. Callahan. Lessons in Ergonomics from My Grandmother. Blog Post and Audio Recording. October 28, 2018.

C. Callahan and A. Chamberlin. Forced Air Cooler: Pallet Model. Build Plans. October 5, 2018.

C. Callahan and A. Chamberlin. Forced Air Cooler: Countertop Model. Build Plans. October 5, 2018.

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2024 Testimony before The U.S. Senate Committee on the Judiciary. Hearing On "Breaking the Visa-Mastercard Duopoly: Bringing Competition and Lower Fees to the Credit Card System." As Co-Owner, Battenkill Books, not representing UVM. November 19, 2024.

2018 Panel. Public Meeting to Discuss Draft Guidance for Industry on the Standards for the Growing, Harvesting, Packing and Holding of Produce for Human Consumption. US FDA. Albany, NY. December 11, 2019.

2015 Vermont Comprehensive Energy Plan. Contributor to Biomass and Biodiesel Sections. November 2015.

2011 Testimony to the U.S. House of Representatives Biomass Caucus. Washington DC. October 13, 2011. Topic: Overview of farm-based sustainable biodiesel production from oilseed crops.

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GRANTS & CONTRACTS

Grant and Role Summary

Year	Grants	Amount
2026	2	$252,129
2025	8	$4,392,863
2024	5	$998,052
2023	5	$66,968
2022	6	$487,801
Total past 5 years	26	$6,197,813
Avg past 5 years	5	$1,239,563
Total since 2008	80	$15,764,681

Role	Number	Award Total
PI	48	$10,447,270
Non-PI	1	$124,999
Sub/KP	8	$641,557
Advisor	11	$3,667,693
External	12	$686,877

2026 **C. Callahan**, L. Kenton, W. Sorrell. Dairy Education for Youth. VT Dairy Promotion Council. $25,557. 1/1/2026-3/31/2027. PI. Active.

A. Radocchia & **C. Callahan**. Advanced Manufacturing Capability for the FTC Cookie Clickers. Gene Haas Foundation. $2,500. 1/1/2026-12/31/26. Co-PI (through Bennington Area Makers with youth team member leading the proposal.) Complete.

2025 **C. Callahan**, S. Dion. Smith-Lever Special Needs FY26. USDA NIFA. $11,347. 10/1/2025-9/30/2026. PI (as Interim Extension Director). Active.

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R. Beckford, **C. Callahan**. Agricultural Clean Water Improvement Program (CWIP). Vermont Agency of Agric Food and Markets. $3,394. 8/1/2024-7/31/2026. PI - transferred from R. Beckford in 2025.

S. Kleinmann, E. Bishop von Wettberg, S. Merrill, S. Lewins, **C. Callahan**. AgroTek Innovation. USDA NIFA. $645,856. 1/1/2022-12/31/2026. PI - transferred from S. Kleinmann in 2025.

S. Kleinmann, **C. Callahan**, L. Kenton, C. Kauffman, J Holzberg-Pill. Youth Innovators Empowering Agriculture. USDA NIFA. $1,309,156. 5/1/2023-4/31/2028. PI - transferred from S. Kleinmann in 2025.

R. Howard, L. Calderwood, **C. Callahan**. Forced Air Cooling for Moisture Control on Fresh Wild Blueberries. NE-SARE Farmer Grant FNE25-120. $24,176. 4/1/2025-3/31/2027. Technical Advisor. Active.

C. Callahan, I. Leslie, M. Shcheglovitova, G. Solarzano. Documenting Vermont Needs, Assets, and Angles in Support of Thriving Communities. UVM Leahy Institute for Rural Partnerships. $249,629. 1/1/2026-12/31/2026. Invited. PI. Active.

V. Izzo, M. Fruend, **C. Callahan**. Evaluating new paper-mulch alternatives to plastic mulch on Northeastern vegetable farms. NE-SARE Research and Education Grant. LNE25-493R. $199,679. 12/1/2025-11/30/2028. Key Personnel. Active.

C. Callahan, A. Loewald, E. Newbold. Integrated Extension Educational Programming in Support of the VAAFM Produce Program – Phase VIII. Vermont Agency of Agriculture, Food, and Markets under prime award from US Food and Drug Administration. $35,000. 10/15/2024-6/30/2025. PI. Complete.

2024 L. Boudreau, M. Senecal, **C. Callahan**, K. Becker, J. Jenkins, D. Chammings, T. Payne. Nita M. Lowey 21ST Century Community Learning Centers in Bennington. External to UVM. $608,000. Active.

M.A. Amalaradjou, **C. Callahan**, B. Sideman. From seed to plate: Improving produce safety for organic production using natural biocontrol strategies. USDA OREI, sub through University of Connecticut. $199,340 sub-award on $3.3 million prime award. 9/1/2024–8/31/2028. Co-PI. Active.

E. Byer & **C. Callahan**. Improved Telescoping Arm for the FTC Cookie Clickers. Vermont Academy of Science and Engineering (VASE). $1396. 9/1/2024-6/30/2025. PI (through Bennington Area Makers with youth team member leading the proposal.) Complete.

P. Tocco, **C. Callahan**, E. Newbold, K. Woods. Crowdsourcing an Image Library: Creating a user generated image library for education and outreach. USDA NIFA FSOP. 9/1/24-8/31/27. $84,317 sub-award on $404,000 prime award. Co-PI. Active.

H. Darby, **C. Callahan**, S. Kostell, S. Building Capacity of Farmers to Produce Industrial Hemp Fiber. Pennsylvania State University / SUN Grant. $124,999. 1/1/2024-6/30/2025. Key Personnel. Complete.

2023 **C. Callahan**, V. Grubinger, A. Etter, N. Perdrial, J. Faulkner, R. Madden, S. Lewins, H. Estrin, V. Izzo, A. Chamberlin, E. Newbold. Research Enhancing Productive Land Activities in the Near Term (REPLANT). UVM OVPR & GUND Institute Rapid Flood Response Funding. $3,000. 9/1/2023-12/31/2023. PI. Complete.

C. Callahan, H. Estrin, and A. Chamberlin. Integrated Extension Educational Programming in Support of the VAAFM Produce Program – Phase VI. Vermont Agency of Agriculture, Food, and Markets under prime award from US Food and Drug Administration. $30,000. 7/1/2023-6/30/2024. PI. Complete.

E. Hunt & **C. Callahan**. Expanding Development Platforms for the FTC Cookie Clickers. Vermont Academy of Science and Engineering (VASE). $968. 7/1/2023-6/30/2024. PI (through Bennington Area Makers with youth team member leading the proposal.) Complete.

2022 **C. Callahan**, B. Lierman, H. Lipstein. Improving Climate Action through Cycling in Bennington. 9/1/2022-9/30/2023. Vermont Council for Rural Development. Climate Catalyst Program. $4,979. PI (through The Bike Hub, Inc.) Complete.

C. Callahan, A. Bashevkin, B. Lierman, J. Hogan, A. Hall. Increased Bicycle Access to Improve Health Equity in Bennington. Bennington County Regional Commission with

Vermont Department of Health, prime from US Center for Disease Control. 9/1/2022-9/30/2023. $24,000. PI (through The Bike Hub, Inc.) Complete.

C. Callahan, S. Fogarty, E. Newbold, A. Chamberlin, H. Machado, and S. Sirsat. Understanding and Addressing Needs for On-Farm Produce Safety Education in Hydroponics and Aquaponics. USDA Food Safety Outreach Program. $400,000. 9/1/2022-8/31/2025. PI. Complete.

C. Callahan, H. Estrin, and A. Chamberlin. Integrated Extension Educational Programming in Support of the VAAFM Produce Program – Phase V. Vermont Agency of Agriculture, Food, and Markets under prime award from US Food and Drug Administration. $30,000. 7/1/2022-6/30/2023. PI. Complete.

E. Hunt & **C. Callahan**. Vertical Articulation Advancements in the FTC Cookie Clicker 18650 Robot "Chip." Vermont Academy of Science and Engineering (VASE). $409. 7/1/2022-6/30/2023. PI (through Bennington Area Makers with youth team member leading the proposal.) Complete.

C. Callahan, H. Estrin, and A. Chamberlin. Integrated Extension Educational Programming in Support of the VAAFM Produce Program – Phase IV. Vermont Agency of Agriculture, Food, and Markets under prime award from US Food and Drug Administration. $29,416. 1/25/2022-6/30/2022. PI. Complete.

2021 P. Ackerman-Leist, C. Kimball, W. Cavanaugh, **C. Callahan**, B. Leach, R. Thistlethwaite. Facilitation of the Development of VTC Meat Processing Curricula and Facilities. Awarded through Regen by Design, LLC via Vermont Technical College under prime from USDA Rural Business Development Grant. $25,000. 7/31/2021-7/22/2022. Key Personnel. Complete.

E. Newbold & **C. Callahan**. The Northeast Produce Safety Research Consortium. US FDA. $1,380,523. 10/1/2021-9/30/2026. Co-PI. Active.

D. Abruzzini, C. Riggs, C. Alexander, M. Fasching, B. Lesnokoski, R. Madden, **C. Callahan**, Aaron Loomis. High Tunnel Gantry System with Transport Cart and Automated Row Cover System to Assist Small Farm Production, Scalability, and Profitability. USDA NE-SARE. ONE21-381. $29,944. 8/1/2021-3/1/2023. Advisor. Complete.

C. Callahan, H. Estrin, and A. Chamberlin. Integrated Extension Educational Programming in Support of the VAAFM Produce Program – Phase III. Vermont Agency of Agriculture, Food, and Markets under prime award from US Food and Drug Administration. $71,782. 7/1/2021-12/31/2021. PI. Complete.

N. Hunt, E. Hunt, & **C. Callahan**. Mecanum Wheels to Advance Propulsion Engineering in FTC Cookie Clicker 18650 FTC Bot. Vermont Academy of Science and Engineering (VASE) Hands on Science and Technology (HOST) Grants. $1,000. 9/1/2021-8/31/2023. Non-UVM Award. PI (through Bennington Area Makers with youth team members co-developing the proposal.) Complete.

C. Callahan, J. Jenkins, K. Griffin. Axes of Awesome: Collaboratively Building the X, Y and Z at BAM. Community Design and Construction of Mobile Make Mesas (M3s). Vermont Academy of Science and Engineering (VASE) Hands on Science and Technology (HOST) Grants. $952. 4/21/2021-9/1/2021. Non-UVM Award. PI (through Bennington Area Makers). Complete.

J. Amann, J. Perkins, D. Smith & G. Schimelpfenig. Data-Driven Market Transformation for Controlled Environment Agriculture. USDA CIG. $595,026. 2/1/2021-1/31/2024. Advisor. Complete.

2020 **C. Callahan** and J. Walker. Enhancing predictive, geo-informed COVID-19 response behavior with push notification outreach to reduce community spread. VT ACCD via UVM OoE COVID Outreach RAPID Grants. $4,800. 11/15/2020-12/20/2020. Key Personnel. Complete.

L. Chase, W. Wang, **C. Callahan**, H. Estrin, A. Chamberlin. Support for Farm and Food Tourism Businesses Negatively Impacted by COVID-19. VT ACCD via UVM OoE COVID Outreach RAPID Grants. $15,373. 11/15/2020-12/20/2020. Sub-award. Complete.

E. Newbold and **C. Callahan**. Extension Legal Services Initiative: Food Safety Modernization Act (ELSI:FSMA) – Continuation Funding. Vermont Law School (prime). 10/1/2020-8/30/2021. $48,696. Co-PI. Complete.

V. Grubinger, **C. Callahan**, H. Estrin, A. Chamberlin, R. Hadad, A. Debovis. Training and Technical Support to Help Small Vegetable Farms Meet the Cleaning and Sanitization Requirements of the Produce Safety Rule. USDA NIDA FSOP. $442,613. 9/1/2020-8/31/2023. Key Personnel, Co-PI. Complete.

C. Callahan and C. Healy. Southshire Community School COVID Education Improvements. COVID Relief Fund. US Federal Emergency Management Agency via Vermont Agency of Education. $3,676. 9/1/2020-3/31/2020. Non-UVM award. Complete.

C. Callahan and C. Healy. Southshire Community School Ventilation Improvements. Vermont COVID Indoor Air Quality Grant Program. Efficiency Vermont with Vermont Agency of Education. $25,000. 8/1/2020-3/31/2020. Non-UVM award. Complete.

D. Conner, R. Desrochers, L. Chase, H. Darby, M. Niles, **C. Callahan**, B. Bauerly, H. Blair, N. Cunningham, C. Whitehouse, J. Krueger. Agility in the face of disruption: Food business rapid response to COVID-19. UVM CALSX ARS Rapid Response to COVID-19. $19,892. June 19, 2020 – June 20, 2021. Key Personnel. Complete.

C. Callahan. Lab-Keeper: Cold Storage at Stone Barns Center for Sustainable Agriculture. Tarrytown, NY. $9,395. 4/1/2020-6/30/2021. PI. Complete.

D. I. Riggs, **C. Callahan**, G. Loeb, L. McDermott. Design, Testing and Construction Education of a Post and Wire Support Structure for Insect Exclusion Netting on Field Grown Berries. USDA NESARE Farmer Grant #FNE20-963-34268. $15,000. 2/21/2020-2/28/2022. Technical Advisor. Complete.

2019 J. Harvey, C. Ross, et al. Increasing Small-Farm Viability and Human Nutrition in the Local Food Systems of the New England States. USDA ARS Research Center at UVM. $1,350,000. Advisor. Complete.

E. Bihn and **C. Callahan**. Cleaning, Sanitizing and Sanitary Design for Small and Medium Scale Specialty Crop Growers. NYSDAM SCBG $99,900. 10/1/2019-9/29/2022. Sub-Award ($20,000). Complete.

C. Stewart, C. Hoepting, & **C. Callahan**. Postharvest Handling of Garlic for Control of Pests and Disease. USDA NESARE Professional Partnership Grant #ONE19-351. $29,968. 8/1/2019-7/31/2022. Co-PI. Complete.

A. Chamberlin and **C. Callahan**. The Ag Engineering Podcast: Tools, Tips, and Techniques for Improving Sustainability on Your Farm. USDA NE SARE Professional Partnership Grant. $27,280. 8/1/2019-7/31/2021. Key Personnel. Complete.

Sgorbati, S., et al. Bennington County Study to Address Systemic Causes of Food Insecurity. Andrew W. Mellon Foundation to Bennington College. $1,000,000. 6/1/2019-5/31/22. Advisor. Complete.

C. Callahan, D. Schaffner, E. Bihn, E. Newbold. Decision Support Tool for Grower Adoption of Food Safety Practices. USDA AFRI Critical Agriculture Research and Extension (CARE) Grant. $299,414. 6/1/2019-5/31/2022 - NCE. Award Notification April 23, 2019. PI. Complete.

C. Callahan & A. Chamberlin. Staying Ahead in the Packshed: Improving Postharvest Equipment and Building Guidance for Fruit and Vegetable Farms. USDA NE SARE Research and Education Grant. LNE19-375. $129,567. 4/1/2019-3/31/2021. PI. Complete.

2018 **C. Callahan**, H. Estrin, and A. Chamberlin. Integrated Extension Educational Programming in Support of the VAAFM Produce Program - Phase II. $186,005. 12/4/18-4/31/2021. PI. Complete.

Kinchla, A., D. Lass, J. Fitzsimmons, J. Waite, L. Buxton, J. Benoit. Extending the Season: Freezing Produce for a New Market. USDA NE SARE Innovations Grant. LNE18-370. $199,524. 10/1/2018-12/31/2020. Advisor. Complete.

E. Newbold, **C. Callahan**, E. Bihn, A. Kinchla, L. LaBorde. The Northeast Center to Advance Food Safety (NECAFS). USDA NIFA FSOP. 8/1/2018-7/31/2021. $799,797. Co-PI. Complete.

E. Newbold and **C. Callahan**. Extension Legal Services Initiative: Food Safety Modernization Act (ELSI:FSMA). Vermont Law School (prime). 10/1/2018-9/30/2020. $99,985. Co-PI. Complete.

C. Callahan, J. Griswold, A. Carlucci, J. Goldstone, & E. Callahan. Barn Preservation Award for the Sidney Colvin Farm, North Bennington. #07110 BG18-006. Vermont Division for Historic Preservation, Agency of Commerce and Community Development. $15,000 award on $51,773 project. PI as volunteer with Southshire Community School. Complete.

2017 W. Kuhns, R. Shephard, C. Kuhns, & **C. Callahan**. Technology Commercialization Co-Development Proposal: Improved Humidity Control with the DewRight. Vermont Agency of Commerce through UVM Office of Technology Commercialization in partnership with Vermont Energy Control Systems (VECS). $52,200. Key Personnel. Complete.

C. Callahan, H. Estrin, & A. Chamberlin. Integrated Extension Educational Programming in Support of the VAAFM Produce Program – Phase I. $100,000. PI. Complete.

C. Callahan. Eastern Broccoli Packing House Design for Sanitary Practice. Sub-award from Cornell University on USDA SCRI project. $39,974. PI. Complete.

R. Belforti and **C. Callahan**. Livestock manure briquette fuel-making machine: Design and implementation for small farms. USDA NE-SARE Farmer Grant #FNE17-862. $13,743. Technical Advisor. Complete.

Kinchla, A., N. Richards, L. Pivarnik. Food Safety Management Training for Small and Emerging Food Businesses: Integrating A Food Safety Culture from Concept to Commercialization. USDA NIFA FSOP. $398,000. Advisor. Complete.

2016 **C. Callahan.** Produce Tracking and Traceability Project. Vermont Agency of Agriculture, Farms and Markets & Vermont Housing and Conservation Board. $39,967. PI. Complete.

2015 **C. Callahan** and R. Hadad. The "In-Between": Precooling and Curing Fruits & Vegetables for Improved Quality and Profit. USDA NE SARE Research and Education (LNE16-347). Sept 2016. $127,799. PI. Complete.

C. Callahan, E. Bihn, A. Kinchla, L. Laborde, C. Walsh. The Northeast Center to Advance Food Safety (NECAFS). USFDA and USDA National Training, Education, Extension, Outreach, and Technical Assistance Competitive Grants Program: Regional Center Grants to Enhance Food Safety. $949,867. PI. Complete.

E. Mallory, E. Gallandt, J. Hao, R. Kersbergen, H. Darby, **C. Callahan**, A. Hazelrigg, & D. Heleba. Innovative Sowing, Cultivation, and Rotation Strategies to Address Weed, Fertility, and Disease Challenges in Organic Food and Feed Grains. USDA AFRI Organic Research and Education Initiative. September 30, 2105 – September 30, 2019. $82,000 sub on $999,120 award. Key Personnel. Complete.

C. Callahan, D. Grover, D. Cox, RJ Steinhart. Innovative Impact Assessment of Farm & Food Innovations. USDA Northeast Sustainable Agriculture, Research and Education (NE-SARE). Professional Partnership Grant. ONE15-230-29001. April 1, 2015 – April 15, 2017. $14,999. PI. Complete.

C. Callahan, C. Davis, A. Dantzscher, J. Bootle, S. Bosworth. Densification and Combustion Trials of Solid Grass Biomass Fuels in Vermont. Vermont Bioenergy Initiative. January 1, 2015 – December 31, 2015. $21,650. PI. Complete.

C. Callahan, G. Cox, R. Steingress, C. Brown. Biomass Boiler for the Vermont Farmer's Food Center (VFFC). Rutland, VT. Combined cash funding from Vermont Bioenergy Initiative (USDOE), Vermont Agency of Agriculture, Food and Markets, and a private anonymous donor with cash and in-kind from VFFC. January 1, 2015 – December 31, 2015. $109,636. PI. Complete.

2014 **C. Callahan**, A. Kinchla, E. Bihn, L. Pivarnik, D. Hirsch, R. Hadad, V. Nickerson, R. Hazard, V. Grubinger. Toward a Regional Postharvest Research and Extension Center for the Northeast. Planning Grant from Northeast Extension Directors (NEED) and Northeastern Regional Association of State Agricultural Experiment Station Directors (NERA). December 1, 2014 – May 1, 2015. $3,996. PI. Complete.

C. Callahan. Pilot Production of Innovative Electronic Psychrometer. UVM Office of Technology Commercialization. August 6, 2014 – Present. $9,000. PI. Complete.

2013 **C. Callahan**, E. Kahler, S. Sawyer, A. DePillis, JJ Vandette. "On Farm Energy Success Stories." Vermont Sustainable Jobs Fund – Farm to Plate Network – Energy Cross Cutting Team. Funded by the Northeast Sustainable Dairy Collaborative. April 1, 2013 – January 31, 2014. $12,000. Co-PI. Complete.

V. Grubinger & **C. Callahan**. Increasing Supply and Quality of Local Storage Vegetables. Vermont Working Lands Enterprise Initiative Service Provider Grant. April 1, 2014 – June 30, 2015. $40,000. Co-PI. Complete

R. Morris, S. Ward, et al. Vermont Food Safety Task Force: Lot Tracking for Small Scale Food Producers and Processors of Vermont. Vermont Working Lands Enterprise Initiative, Vermont Housing Conservation Board, and Mad River Food Hub. $15,000. Advisor. Complete.

E. Johnstonbaugh, T. Baugher, A. J. Both, **C. Callahan**, S. Hawkins, Z. Helsel, J. Sikora, T. Manning, G. Musgrave, B. Pollock, G. Roth. USDA Northeast Sustainable Agriculture Research and Education. Professional Development Program Grant. "Farm Energy IQ Training Program." ENE12-128. August 1, 2013 – April 30, 2015. $145,000. Key Personnel. Complete.

C. Callahan. Vermont Sustainable Jobs Fund / Vermont Bioenergy Initiative. Technical Assistance Grant. Extension Support of Vermont On-Farm, Sustainable Biofuels Commercialization. July 1, 2013 – April 15, 2016. $88,109. PI. Complete.

C. Callahan, J. Satz, D. Marchant, A. Knafel, R. Morris. USDA Northeast Sustainable Agriculture, Research and Education. Professional Partnership Grant. "Food Storage Curriculum for Farmers and Processors" ONE13-176. July 1, 2013 – December 31, 2015. $14,952. PI. Complete.

2012 W. Harper, E. Wonnacott, L. Prim, **C. Callahan**, B. Holtzman, USDA Northeast Sustainable Agriculture, Research and Education. Research and Education Project "Integrated Learning Courses for Organic and Sustainable Vegetable Production." LNE09-283. $158,961. Key Personnel. Complete.

C. Callahan. UVM Extension Sub-Contract. "Mobile Hops Harvester and Oast Design and Prototype Development." $15,000. PI. Complete.

2011 D. Schaufler, R. Elias, H. Darby, & **C. Callahan**. USDA Northeast Sustainable Agriculture, Research and Education. Research and Education Grant. "Adding Value to Oilseed Crops by Producing Food Quality Oils." LNE11-309. $143,131. Key Personnel. Complete.

C. Callahan. Vermont Sustainable Jobs Fund / Vermont Bioenergy Initiative. "A Feasibility Analysis of a Mobile Unit for Processing Oilseed Crops and Producing Biodiesel in Vermont". $26,350. PI. Complete.

C. Callahan. USDA Northeast Sustainable Agriculture Research and Education. Professional Partnership Grant. "Crop Based Biofuels Feasibility Study for Washington County, New York." ONE07-069. $9,443. PI. Complete.

2008 **C. Callahan**, M. Freund, & B. Freund. USDA Northeast Sustainable Agriculture Research and Education. Professional Partnership Grant. "Digester Performance Tracking, Analysis and Lessons Learned Review at Freund's Farm." - (2006-2008) - ONE06-053. $9,979. PI. Complete.

PROJECTS IN INDUSTRY

2005-Present Private practice consulting engineering focused on systems engineering, agricultural projects and sustainable energy systems. Consulting work scope which included increasing amounts of research and teaching. Publications and other work product generally restricted as client intellectual property.

2018 **Callahan, C.** & Marchant, D. Agricultural Energy Management Plan: Riverberry Farm, Fairfax, VT. December 16, 2018.

2012 **Callahan, C.** & Zheim, E. Agricultural Audit and Recommendations: Tiashoke Farms, Cambridge, NY. For NYSERDA FlexTech. March 3, 2012.

2011 **Callahan, C.**, Rainville, R., Darby, H., L'Etoille, E. Mobile Hops Picker. 2011-2012 (Work started in private practice and transitioned to UVM Extension work plan in 2012.)

Callahan, C. & Collins, M. Solar Hot Water for Greenhouse Heating System. Old Athens Farm, Putney, VT. 2011.

2010 **Callahan, C.** & Satz, J. Centralized Greenhouse Biomass Boiler. Wood's Market Garden, Brandon, VT. 2010-2012.

Callahan, C. & Marchant, D. Centralized Greenhouse Biomass Boiler. River Berry Farm, Fairfax, VT. 2010-2012.

Callahan, C. & Knafel, A. Centralized Greenhouse Biomass Boiler. Clear Brook Farm, Shaftsbury, VT. 2010.

Callahan, C. & Betz, P. Centralized Greenhouse Biomass Heating System. Hi Ledge Farm, Woodbury, VT. 2010.

2009 **Callahan, C.** Agricultural Audit and Recommendations: Daughters of Sarah Senior Community, Albany, NY. For NYSERDA FlexTech. September 11, 2009.

2008 **Callahan, C.** Support of Vermont Bioenergy Initiative (VBI) of the Vermont Sustainable Jobs Fund (VSJF) related to oilseed production, postharvest handling, pressing, and conversion to biodiesel. 2008-2012 (Work started in private practice and transitioned to UVM Extension work plan in 2012.)

2007 **Callahan, C.** Energy Model and Summary Findings: Powell House, Old Chatham, NY. July 12, 2007.

Callahan, C. Energy Model and Summary Findings: Carletta-Barnett Residence. For Bakker Architects, Shavertown, PA. May 25, 2007.

2006 **Callahan, C.** An Audit of Energy and Power Use at Eastern Castings Company, Inc. Cambridge, NY. August 28, 2006.

Callahan, C. Energy Model and Summary Findings: Tabachnick Residence, Bridgeport, CT. For Trillium Architects, Norwalk, CT. September 27, 2006.

Callahan, C. Energy Model and Summary Findings: Old Chatham Friends Meeting House, Chatham, NY. For Nomad Architecture, Long Island City, NY. January 3, 2006.

Callahan, C. Energy Model and Summary Findings: Red Devon Restaurant, Bangall, NY. For Nomad Architecture, Long Island City, NY. January 2, 2006.

2005 Smith, W., Meyer, A., McElroy, J., **Callahan, C.** Advanced Passive Water Management Fuel Cell – Infinity Fuel Cell & Hydrogen, LLC. Suffield, CT. 2005-2012.

Smith, W., Meyer, A., **Callahan, C.** Portable Regenerative Fuel Cell Power Plant. Infinity Fuel Cell & Hydrogen, LLC for the US Naval Air Warfare Center in China Lake, CA. Suffield, CT. 2005-2012.

2004-2005 Business development and customer relations for US fuel cell company in pursuit of European R&D and technology development opportunities. Publications and other work product generally restricted as corporate intellectual property.

2003-2004 Resident engineer, quality assurance, and technology transfer representative on-site at customer R&D facility (Japan) for US manufacture of pilot production hydrogen fuel cell engines. Publications and other work product generally restricted as corporate intellectual property.

2002-2003 Functional team lead on advanced gasoline-fueled fuel cell engine prototype involving multi-cultural, joint-venture dynamics (US-Dutch-Japanese). Activity required management of multiple systems-level design, analysis and requirements definition and communication. Publications and other work product generally restricted as corporate intellectual property.

2000-2002 Functional lead on high-paced, high-risk, high-visibility, vehicle integrated, hydrogen fueled, fuel cell engine with direct automotive customer involvement (Korean). Publications and other work product generally restricted as corporate intellectual property.

1998-2000 Development of functional and schematic system design for gasoline fueled, reformate fuel cell power plant. Involved integration of multi-disciplinary team in leveraging functional expertise to deliver 50kW gasoline fueled transportation fuel cell engine prototype. Publications and other work product generally restricted as corporate intellectual property.

1997-1998 Development of low-NO_x propane and natural gas burner for residential hot water boiler heating plant (90,000-250,000 BTU/hr output). Design, development and documentation of cast iron heat exchangers in a wide range of residential, commercial and industrial boiler systems; some with last revision dating to 100 years prior. Publications and other work product generally restricted as corporate intellectual property.

OTHER INVENTIONS

2020 Improved Hands-Free Handwashing Station for Areas without Plumbed water. Open Source via Ag Eng website. 6/9/2020.

2015 Doser for Small Scale Vegetable Washing with Sanitizer. Open Source via FarmHack. 6/16/2015.

2014 Simple DIY Outside Air Exchange. Open Source via FarmHack. November 2, 2014.

2014 DIY High Capacity, Auto-Fill Humidifier. Open Source via FarmHack. January 12, 2014.

2012 Portable Mechanized Hops Harvester. Open Source via FarmHack and Extension. January 3, 2012.

SOFTWARE & CALCULATORS

2025 Wall Thermal Calculator. A web application that allows the user to build a multiple layer wall construction and performs a thermal analysis on the construction to determine the heat transfer characteristics of the wall including probable condensation plane location. August 28, 2022. Revised January 9, 2023, February 8, 2024, and December 18, 2025.

2023 High Tunnel and Greenhouse Heating and Cooling Calculator. A web application that estimates heating load, ventilation and circulation requirements, and fuel use based on user inputs. April 19, 2022. Revised April 3, 2023

Heating and Cooling Load Calculator for Coolers and Warm Rooms. A web-based calculator to help produce growers estimate the size of heater or refrigeration required for a room of specific size and insulation. November 7, 2021. Revised August 24, 2023.

2022 Bean Counter: A Simple Counting App. A web app that allows the user to simply tap the screen to count something without looking. This was a suggestion from a grower who often lost track of how many bunches of baby carrots they had put in a container. May 4, 2022.

2021 Sanitizer Dose Calculator (web version). An updated version of a previous Excel-based calculator to allow web-based and mobile phone access. January 14, 2022.

2020 Soil Properties and Steaming Calculator. A Google Sheet that consolidates soil thermal properties and provides an estimator for soil steaming practices as weed control. October 26, 2020, revised April 20, 2022.

2016 Pump and Pipe Calculator. An Excel based calculator used to help size piping systems and select appropriate pumps for hot water heating systems in greenhouse and for other small-scale farm pumping applications.

Herb Drier Sizing Calculator. An Excel based calculator that uses the functions of Psychrocalc (below) to assist growers with sizing batch driers for medicinal herbs.

2015 Crop Storage Planning Tool. An Excel based crop storage planning tool that allows the user to enter the amount of various crops they plan to store and then groups the crops by common temperature and humidity zones and also estimates storage volume and product respiration load.

Pyschrocalc Excel Add-in. An advancement of the earlier spreadsheet based humidity calculator, this add-in is a series of Excel functions that lets the user perform calculations and look-ups similar to using a psychrometric chart.

Sanitizer Dose Calculator for Vegetable Washing. This spreadsheet was developed to help food producers do sanitizer dose calculations in dunk tanks and wash sinks.

2014 Humidification Calculator. Excel spreadsheet that allows the user to determine relative humidity based on dry-bulb and wet-bulb temperature measurements, and vice versa. This calculator also incorporates a relationship for determining the rate of water vapor evaporation into air based on several design factors in order to allow design of custom humidifiers for cheese aging, meat curing and root vegetable storage.

2012 UVM Hop Harvest Readiness Calculator. Web-based and Excel format calculator that allows growers to determine when to harvest their hops for optimal quality. With support from L. Carrasco.

2010 Vermont Oilseed Cost and Profit Calculator. Excel based calculator that provides for easier calculation of crop production cost, cleaning/drying cost, pressing cost, and biodiesel conversion cost as well as profit from various products derived from oilseeds based on market pricing.

SERVICE

PROFESSIONAL SERVICE

2023	ANSI/ASABE Standard: X644 Direct to Consumption Specialty Crop Equipment Sanitary Design Requirements. Standard Revision Committee.
2022	Review Panel. USDA Small Business Innovation Research (SBIR) Program– Phase I. Plant Production and Protection (Engineering). Fiscal Year 2022. February 7-11, 2022.
2019-Present	Plant Systems Group of the Plant, Animal and Facility Systems Committee (PAFS-30) – American Society of Agricultural and Biological Engineers (ASABE). Observing Member, Liaison for ES-300.
2015-Present	Specialty Crop Engineering Committee (MS-48) – American Society of Agricultural and Biological Engineers (ASABE).
2015-Present	Electrical Utilization & Energy Application Committee (ES-300) – American Society of Agricultural and Biological Engineers (ASABE). Secretary 2015-2017, Vice Chair 2018-2020. Chair 2020-2022.
2016-2017	ANSI/ASABE Standard: X475.2 Design and Management of Storages for Bulk, Fall-Crop, Irish Potatoes. Standard Revision Committee.
2015-Present	ANSI/ASABE Standard: S612 Performing On-farm Energy Audits. Standard Revision Committee. Vice Chair (2018-2020) and Chair (2020-2022)
2014-2021	ASABE Technical Session Moderator: Techno-Economic Modeling of Food, Coproduct, Byproduct and Waste Systems. Recurring session at ASABE Annual Meeting.
2013-Present	Engineering Licensure Committee (EOPD-414, formerly ED-414) – American Society of Agricultural and Biological Engineers (ASABE) and The National Council of Examiners for Engineering and Surveying (NCEES) ABE Exam Development Chair 2015-2017 Examination for Professional Engineers (EPE) Committee Agricultural and Biological Engineering (ABE) Exam Representative – National Council of Examiners for Engineering and Surveying (NCEES) / American Society of Agricultural and Biological Engineers (ASABE). Seneca, SC. January 25-26, 2019 Atlanta, GA. October 18-20, 2018 Seneca, SC. January 4-6, 2018 Seneca, SC. January 6-7, 2017 Exam Development Sub-Committee – National Council of Examiners for Engineering and Surveying (NCEES) / American Society of Agricultural and Biological Engineers (ASABE). Greenville, SC. September 12-13, 2022 Boston, MA. July 2019 Seneca, SC. February 10-11, 2019 Seneca, SC. October 8-9, 2018

Seneca, SC. February 4-6, 2018

Spokane, WA. July 2017 (Chair)

Seneca, SC. February 6-8, 2017 (Chair)

Orlando, FL. July 17, 2016 (Chair)

Seneca, SC. February 16-17, 2016 (Chair)

Seneca, SC. February 3-5, 2014

Cut Score Panel – National Council of Examiners for Engineering and Surveying (NCEES) / American Society of Agricultural and Biological Engineers (ASABE).

Atlanta, GA. May 14-15, 2015

Professional Activities and Knowledge/Skills Study (PAKS) Test Specification Committee – Project of The National Council of Examiners for Engineering and Surveying (NCEES) / American Society of Agricultural and Biological Engineers (ASABE).

Dallas, TX. October 28-29, 2019

Chicago, IL. November 6-7, 2013

2012-Present	FarmHack Network – Contributor & Organizer
2006-Present	American Society of Agricultural and Biological Engineers (ASABE). Member.
2005-2010	National Society of Professional Engineers – Young Engineers Committee.
2000-2005	Society of Automotive Engineers - Fuel Cell Standards Committee – Coordinating Author of Standard J2615: Testing Performance of Fuel Cell Systems for Automotive Applications.

DEPARTMENT & UNIVERSITY SERVICE

2026-	UVM Strategic Plan Implementation Committee. Member
2025	UVM Strategic Planning Committee. Member.
2025-	UVM Extension Faculty Organization (restarted 2025), Chair 2025
2025-	UVM CALS Dean's Council. Member.
2023	UVM OVPR Research Leadership Group. Member.
2023	UVM Extension Search Committee. Northeast Sustainable Agriculture, Research & Education Director
2023	Planning Committee. UVM Venture Summit 2023. Faculty representative.
2023	UVM Extension Search Committee. Extension Assistant Professor of Community and Economic Development - Chair
2022-Present	Extension Cabinet (now Policy and Program Leadership Team)
2022	NECAFS Research Specialist Search Committee (Successful)
2019	UVM CALS ARS Center Research Manager Search Committee (Successful)
2021- Present	UVM Extension Common Ground Committee (formerly Diversity, Equity, and Inclusion Committee)
2020	NECAFS Research Specialist Search Committee (Successful)
2019	UVM CALS Dean Search Committee (Successful)

2019	UVM CALS Interim Dean Advisory Committee (Successful)
2018-2019	UVM CALS Dean Search Committee (Failed Search)
2017-2019	UVM Extension – Extension Professional Improvement Conference Planning (EPIC) Committee
2017-2019	CALS and Extension Administrative Transition Team.
2017-2019	UVM Faculty Senate: Ad Hoc Committee on Process and Procedures.
2017	UVM Extension Search Committee. Agricultural Engineering Technician. Chair and Hiring Manager. (Successful)
2017	UVM Extension Search Committee. Produce Safety Specialist. (Successful)
2016-2023	UVM Faculty Senate. Extension Representative.
2016	UVM Extension / NECAFS Search Committee – Center Administrator / Outreach Professional Senior. Chair and Hiring Manager. (Successful)
2015	UVM Extension Search Committee – Data Management Specialist – Evaluation (Successful)
2015	UVM Extension Strategic Directions Initiative: Program Quality
2015	UVM Extension Search Committee – Business Support Generalist / Departmental Business Manager. (Successful)
2014/2015	UVM Extension Joint Faculty Search Committee – Two Positions: Food Safety and Community Food and Nutrition. (One Failed, One Successful)
2013-2016	UVM FarmHackers Club. Advisor.
2013-2016	UVM Extension Program Committee. Member.
2012-2016	UVM Extension Faculty Organization. Vice Chair.

STATE, REGIONAL & NATIONAL SERVICE

2026-Present	Vermont Natural Resource Conservation Council. Council Member, UVM Extension Representative. February 26, 2026 –
2025-Present	Vermont Farm Show. Board Member. November 1, 2025 –
2025-Present	Vermont Agricultural Water Quality Partnership Steering Committee. Member
2025-Present	Vermont Natural Resource Conservation Service State Technical Committee. Member.
2025-Present	Vermont Agricultural Recovery Task Force – Co-Chair.
2023	New York Forward Local Planning Committee. Cambridge, NY. Member.
2023-2025	Southwest Vermont Regional Technical School District. Adult Education Advisory Board. Member.
2022-2024	FIRST in Vermont (Youth Robotics). Board Member.
2021-Present	Salvation Farms. Board Member, Vice President (2022-2024), President (2024-).
2021-2023	BAM First Lego League (FLL) 4-H Youth Robotics Team – Founding Coach / Mentor.
2022	Maine Produce Safety Improvement Grant Program – Review Board.

2021- 2023	Bennington County Regional Commission - Entrepreneurial Support Committee Meeting – Member.
2021	Maine Produce Safety Improvement Grant Program – Review Board.
2020-Present	BAM First Tech Challenge (FTC) Robotics Teams - The Cookie Clickers with Chip the Robot (Team #18650, since 2020) & The Bennington Bolts and Biscuits with Major Tom the Robot (Team #32473, since 2025)- Coach / Mentor.
2019-Present	Vermont Produce Safety Improvement Grant Program – Review Board.
2019-Present	The Bennington Area Makerspace (BAM). Founding Board Member.
2019-2021	The Lightning Jar. Bennington Co-Working Space and Business Incubator. Operational Committee Member.
2016-Present	The Northeast Center to Advance Food Safety (NECAFS). Founding Director.
2014-2021	Vermont Equipment Access Program for Value Added Processors. Advisor and Board Member.
2013-2019	Vermont Farm to Plate – Technology Task Force (Member)
2012-2024	Vermont Farm to Plate – Technical Assistance Working Group (Member)
2012-2018	Vermont Farm to Plate – Energy Cross Cutting Team (Chair 2012-2015)

OTHER VOLUNTEER & RELATED EXPERIENCE

2022-Present	Bennington Bike Hub. Founding Board Member. President (2023), Vice President (2022).
2015-2023	Southshire Community School, Board of Directors. North Bennington, VT Treasurer (2016-). Search Committees - Chair (two, 2019). Search Committee – Chair (2020). Search Committee – Member (2021).
2010-2011	Village of Cambridge, NY – Deputy Mayor
2009-Present	Battenkill Books. Cambridge, NY. Co-Owner of a general interest independent bookstore.
2008-Present	Cambridge Sewage Transport Corporation – President. Shared septic system for a mixed-use district in an urban/rural community.
2008-2010	Village of Cambridge, NY – Trustee
2007-2014	The Cambridge Valley Rescue Squad, Inc. Cambridge, NY. Volunteer emergency medical services (EMS) provider & President (2010-2014) of a mixed paid/volunteer rural emergency medical services agency. Currently Life Member with inactive provider status. Highest credential: NYS-AEMT-CC.
2006-2008	Village of Cambridge, NY – Zoning Board of Appeals
1998-2000	American Lung Association – Clean Air Commission – Springfield, MA – Member
1998-2000	City of Westfield Conversation Commission – Westfield, MA – Member
1997-2000	Westfield River Watershed Association – Westfield, MA – Board Member

OTHER ACCOMPLISHMENTS

PROFESSIONAL DEVELOPMENT

2024	The Board-Executive Relationship: A Partnership that Works. Nonprofit Association of Washington. June 11, 2024.
2022	Uprooting Racism in the Food System. Soul Fire Farm (Virtual). November 30, 2022.
2021	Gender and Leadership. S. Mell. UVM Women's and Gender Equity Center. February 25, 2021.
2019	PSA Lead Trainer. #1086. Cornell University & Produce Safety Alliance. US FDA Food Safety Modernization Act Produce Safety Alliance Curriculum. Geneva, NY. March 7, 2019.
2018	Psychometrics 101. Pearson VUE / NCEES. Atlanta, GA. October 18, 2019.
2018	Hygienic Design. Course focused on design of food facilities with hygienic practices. Commercial Food Sanitation - Food Sanitation Institute. New Orleans, LA.
2016	Food Safety Preventive Controls for Human Foods (FSPCA-HF) Alliance Qualified Individual (QI) Training. Three-day training related to US FDA Food Safety Modernization Act FSPCA-HF Curriculum. Amherst, MA.
2016	Produce Safety Alliance Train the Trainer. Cornell University & Produce Safety Alliance. Two-day integrated training related to US FDA Food Safety Modernization Act Produce Safety Alliance Curriculum. Geneva, NY.
2014	Postharvest Technology Short Course. University of California at Davis. Two-week intensive course focused on postharvest technology as applied to fruit and vegetable production and distribution systems. Davis, CA.
2014	Fundamentals of Food Science. University of Pennsylvania. One-week short course designed to education non-food scientists in food science basics. State College, PA.
2013-2014	LEAD21 Class IX – Year-long professional development program run by University of Georgia on behalf of the Land Grant University System. Targeted core competencies include communicating effectively, managing conflict, fostering collaboration and leading change. Minneapolis, MN, Kansas City, MO, Washington, DC.
2013	Facilitative Leadership – One-day intensive facilitative leadership class by Interaction Institute for Social Change focused on improving dynamic collaboration of stakeholder group, inspiring shared vision, and focus on results, process and relationships to improve performance. Montpelier, VT.

MEMBERSHIPS & SOCIETIES

2006-Present	American Society of Agricultural and Biological Engineers (ASABE)
2005-2010	National Society of Professional Engineers (NSPE)
1997-2005	American Society of Mechanical Engineers (ASME)
2000-2005	Society of Automotive Engineers (SAE)

AWARDS

2021	Professional Engineer of the Year. American Society of Agricultural and Biological Engineers (ASABE).
2019	University of Vermont Inventor Hall of Fame.
2015	Vermont Working Lands Enterprise Board (WLEB) Service Provider Grant of the Year Award. Featured in Annual Report.
2011	R&D100 Award. R&D Magazine. Non-Flow-Through Fuel Cell Power System. Ken Burke and Mark Hoberecht (NASA GRC), Alfred Meyer and William Smith (Infinity Fuel Cell and Hydrogen, Inc.), James McElroy (McElroy PEM Technologies, LLC), Christopher **Callahan** (Callahan Engineering, PLLC), and Ian Jakupca (Qinetiq North America).
2010	Legislative Citation – New York State Assembly. In recognition of service to the community as Village Trustee and Deputy Mayor in the Village of Cambridge, NY. May 15, 2010. Sponsored by Assemblyman Tony Jordan.