



THE UNIVERSITY OF
MAINE
Cooperative Extension



**ANNUAL
REPORT
2017**

York County
Cooperative Extension

Local Partnership

The partnership between the University of Maine, County Governments and the county Extension Associations has endured for over a century. As the needs of the people of Maine have changed, so has Cooperative Extension. We are committed to helping Maine succeed across our spectrum of programming. However, success is best achieved by collaboration with the people, businesses, organizations and communities that we work with. Extension is a reflection of the locally identified needs that form the basis for the educational programs that are offered statewide.



The county report is an important way to share the work that has been happening locally and statewide. This report is also an important way that the county Extension Association documents accountability for the investment of funds from County Government. We are very pleased to share this report with you and encourage you to contact your local office with questions or for more information on anything in this report.

—John Rebar, Executive Director

York County Extension Association

Executive Committee 2017 - 2018

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Kristen Grant, York County affiliated Extension Specialist with Maine Sea Grant, Wells

**Putting university research to work in homes, businesses, farms,
and communities for over 100 years.**

*Our annual report features highlights of recent accomplishments
and the difference we make in the lives of Maine citizens and their communities.*

York County Highlights

Agriculture/Gardening

The **York County Farmers Network**, a farmer-to-farmer organization created by UMaine Extension, promotes, supports and strengthens local agriculture through informal gatherings, demonstrations, information and resource sharing. Visit www.ycfn.org for details on recent activities of the network.



UMaine **Extension Agricultural Specialists** provided research based information and educational programs for York County's 800+ farms, nurseries and greenhouses which gross approximately 35 million dollars in sales annually, and employ 3000+ residents part and full-time.

UMaine Extension provided **Integrated Pest Management and Soil Test Services** for 2,300 farmers and home gardeners: diagnosing insect and disease problems, providing control recommendations, with applicator safety, protecting water quality, and the least toxic approach to control emphasized; diagnosing soil deficiencies and providing corrective recommendations to improve soil quality and increase productivity.

York County families and local farms in 2017 **grew and donated 60,330 pounds of fresh produce** to local food pantries, shelters, and soup kitchens through the **Maine Harvest for Hunger** Program. 53 Master Gardener Volunteers harvested, weighed, and delivered the produce to 38 food pantries, shelters, senior centers and other agencies servicing low-income residents.

In 2017, 173 active **York County Master Gardener Volunteers** engaged in over 6,950 hours of volunteer time, a \$136,000 value. They provided educational outreach workshops teaching others how to grow their own food, and community service projects, reaching 7,200 York County residents.

UMaine Extension in **York County gardening programs in 2017** included: Youth gardening education; gardening support for senior citizens and people with physical

disabilities; invasive plant eradication; educational support for 12 school gardens, coordinating community gardens in 9 communities; and teaching people to grow/produce more of their own food.

Maine Hunger Dialogue – UMaine Extension hosted the fourth annual Maine Hunger Dialogue on October 20-21, 2017. This collaborative event convened 85 faculty and students from 13 of Maine's colleges and universities and one high school. During the Dialogue participants were provided with the tools and inspiration needed to develop action plans and Hunger Alleviation Projects to address hunger on campuses and in communities across Maine.

Through our corporate and foundation fundraising, **ten campus teams have been awarded \$500 mini-grants to implement their Hunger Alleviation Projects**, which are focused on areas such as: establishing or maintaining campus food pantries; re-invigorating campus-based community gardens cultivated for local food pantries; establishing food recovery networks to redirect cafeteria surplus to local food security organizations.

Eat Well Nutrition Programs

Two York County Community Education Assistants provided basic nutrition education and food budgeting skills to limited income adults and youth throughout York County in 2017. During the past program year there were **78 families and 617 youth actively involved** in learning about low-cost, nutritious food choices, essentials of human nutrition, food preparation and food safety. These programs take place in homes, community groups and schools. Eat Well Program summary data indicate the following for participating **youth**: 38% improved nutrition knowledge, 47% improved food safety practices, 37% improved their ability to prepare nutritious and affordable food and 22% improved their daily physical activity practices. Summary data for participating **adults** indicate the following: 92% improved diets, 60% improved nutrition practices, 80% improved food resource management practices and 70% improved food safety practices.

Food Safety and Food Preservation

In an effort to provide the safest food possible to the 178,000 people who rely on food pantries and meal service programs to feed themselves and their families, UMaine Extension provides **Cooking for Crowds: Food Safety Training for Volunteers** to teach best practices and to improve food safety to reduce the risk of foodborne illness. Eighteen volunteers from York County participated in these workshops and have been educated on how to safely plan and purchase foods, transport and store foods and how to handle left over foods to prevent

foodborne illness from the 588,000 meals they serve annually to Maine's food insecure population.

UMaine Extension has eight trained Master Food Preserver volunteers who are active in York County. These volunteers helped to extend our reach to **47** York County residents in 2017. These residents participated in one of **6 food preservation workshops** that were held in Wells, Kittery and Arundel. Presenters taught up-to-date canning, drying and freezing methods to preserve food safely. Topics included: Fermenting Vegetables, Preserving Pickles, Freezing Green Beans, and Drying Vegetables.

4-H Youth Development

In 2017, York County 4-H delivered a **six-month special interest program in gardening** with volunteer support from our UMaine Extension York County Master Gardeners. **24 youth** participated in this program. Youth also participated in short term interest and camp programs in Lego robotics, sheep, dogs, chickens, and horses.



York County 4-H conducted a **six-week afterschool robotics program at Waterboro Elementary School** teaching 12 youth, ages 10 - 12, challenge-based programming. None of the youth had previously had any experience using the Lego Mindstorms NXT robots.

As a result of experience in this 4-H robotics program, as reported in a confidential survey of participants administered at the end of the program:

- 83% like to learn more about science and liked science

- 100% like experimenting and testing ideas
- 54% would like to have a job related to science
- 63% do science activities that are not for school
- 50% can do an experiment to answer a question
- 58% can tell others how to do an experiment

As staff liaison to the Maine Eastern States 4-H Sheep team, UMaine Extension Professional Sally Farrell reports that youth grow significantly as individuals, as a result of their participation in the team experience. In addition, seven youth that responded to an anonymous online survey indicated that **as a result of their experience with the 4-H Eastern States Sheep Program:**

- 100% reported that they gained animal science knowledge by preparing for and participating in the skillathon;
- 86% reported that they gained animal science knowledge by preparing for and participating in the quiz bowl.
- 14% reported that they may have gained animal science knowledge by preparing for and participating in the quiz bowl.
- 100% reported that they would attend Eastern States 4-H Sheep Show next year.

Club Programs: Traditional 4-H clubs continue to thrive in York County. In 2017 there were 17 active clubs serving **182 youth members, with 61 trained volunteers.** Volunteers in various programs provided over 6145 hours of volunteer time. York County youth ages 5 to 18 were enrolled in over 400 learning projects, including animal (horse, beef, goat, sheep, poultry, rabbit, and more), arts & crafts, environmental science, communications, health, and more. Club volunteer leaders working with the 4-H program sponsored a Fall Festival recognition and workshop program with 59 4-H participants.

4-H STEM Ambassadors in York County

4-H STEM Ambassadors are trained University of Maine students who facilitate hands-on science, technology, engineering, and math (STEM) activities with youth 8–14 years old throughout Maine. Through 4-H STEM Ambassadors, youth become connected to the research, resources, and scientists at Maine's public universities.

A 2017 **Summer of Science site in Biddeford** was hosted through a partnership with the Southern Maine YMCA. The Biddeford YCMA ran a 10-week summer camp program, where 4-H STEM Ambassador interns delivered **hands-on activities on Innovation Engineering** to 283 young people. The program was hosted in partnership with and funded by Maine EPSCoR.

Maine Sea Grant

Building ME and NH communities' capacity in facilitation and engagement

By leveraging Sea Grant and Cooperative Extension assets in Maine and New Hampshire, both states are better able to build community capacity. Stakeholder engagement in **community planning** is a challenge for coastal Maine municipalities. To build community capacity, Maine Sea Grant the 5-part, 20-hour UMCE training "**Strengthening Your Facilitation Skills**" (SYFS) available in southern Maine. By 2018, over 70 graduates are offering their skills within their communities.

Maine Sea Grant has also joined efforts with community development specialists at UNH Cooperative Extension. This collaboration is making it possible for new programming and services to become available to UMCE clients. The two states collaborated to pilot a 3 session, 21-hour, **Community Engagement Academy** in the Seacoast Region of Southern Maine and NH in April 2017 with a full roster of 30 participants.

Additionally, Maine Sea Grant has partnered with UNHCE to develop and conduct a peer learning program to offer SYFS graduates from both states advanced training and opportunities to build a network of co-facilitators. Lastly, Maine Sea Grant and UMCE worked with Cooperative Extension programs in NH and VA to submit a joint application for endorsement of the Strengthening Your Facilitation Skills Level 1 to the International Association for Facilitators, with a decision pending.

The Beaches Conference 2017 covers the seacoast of Maine and New Hampshire

Conflicts among beach stakeholders including regulators, researchers and coastal property owners initiated the first Maine Beaches Conference in 2000. In 2017, the conference was held for the 11th time to provide a forum for **sharing the most current information among diverse beach stakeholders**. The region for the conference was expanded to Seacoast NH and the conference planning team was also expanded with NH representatives. The fundraising subcommittee raised nearly \$13,200 in sponsorships, and the program committee released a call for presentations, which generated nearly 80 submissions across 6 theme areas. **220 participants** attended.

Partnership with national economists helps Maine's working waterfronts

Maine Sea Grant has built a partnership with the National Oceanic and Atmospheric Administration's Office for Coastal Management to develop a new method

for estimating the economic contribution of working waterfronts to the local economy. Thirty Maine officials attended an economic-analysis workshop in October to test the methods to pinpoint the **economic strengths of their working waterfronts** and grow the economy of tomorrow.

Using the methods they learned, the City of Portland's Economic Development Department is documenting the wide-ranging **industries that benefit from the waterfront**, with the aim of recruiting future businesses. The Sunrise County Economic Council is quantifying all the community **benefits of local commercial fisheries**. The Washington County Council of Governments is working on waterfront grant proposals, local comprehensive plans, and maritime management updates.

Extension Homemakers

York County Extension Homemakers are part of the statewide organization of Maine Extension Homemakers. The purpose of the Homemakers is to help strengthen and extend adult education in the home and community.

Extension Homemakers belong to local community groups involved in assisting with many different community projects. During 2017, Extension Homemakers from York County volunteered over 1,890 hours in service to their communities, with an estimated value of \$33,200. Also, these **Extension Homemaker Volunteers raised and donated \$3,450 toward scholarships for graduating high school students**.

Currently, York County has four Extension Homemakers groups. They are located in Limington, Parsonsfield, Wells Branch, and York. Over 35 members of the York County Homemakers program have had the opportunity to learn with others, make friends, and contribute to their community and county.

In addition, local group members come together to form a county group. The York County Homemakers group coordinates spring, summer, and fall meetings for the membership and works in cooperation with the University of Maine Cooperative Extension to offer public educational programs.

York County Extension Homemakers membership is open to anyone who is interested in learning new information to improve their personal, family, and community life or who is interested in educating and serving members of the Extension Homemakers groups and their communities.

University of Maine Cooperative Extension Support for York County

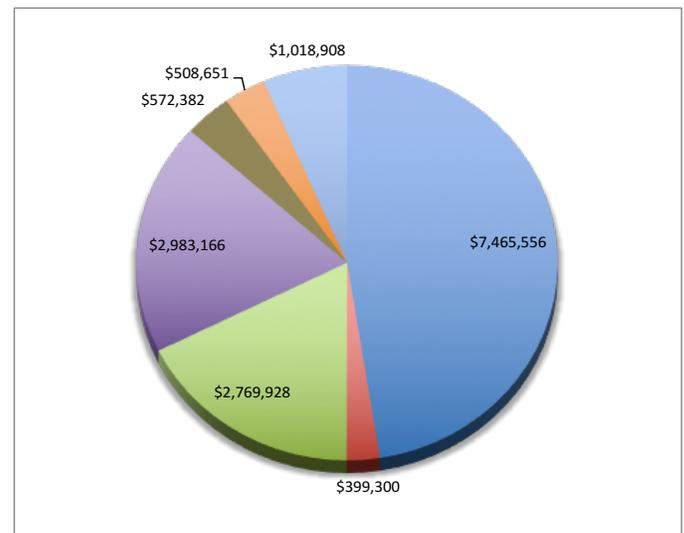
Without statewide support, UMaine Extension would not be present in your county. Funds for projects are provided through the University of Maine, Federal Formula Funds, grants, contracts, and fees. Dollars from other sources support salaries and benefits for Extension specialists, county educators, Extension administration, computer equipment and networking, publications, postage, telephone, and travel.

York County	CY2017
Local Salaries and Benefits	\$322,517
Prorated Support from UMaine*	\$420,345
Computer Equipment and Networking	\$786
Statewide Animal Diagnostic Lab	\$4,350
Marketing, Publications, Video	\$1,335
Local Programming Supplies & Expenses	\$20,494
Postage	\$1,162
Telephone	\$714
Travel	\$17,111
TOTAL	\$788,814
* Prorated support from UMaine reflects travel, postage, telephone, computer equipment & networking, salaries & benefits for administrative and statewide staff.	

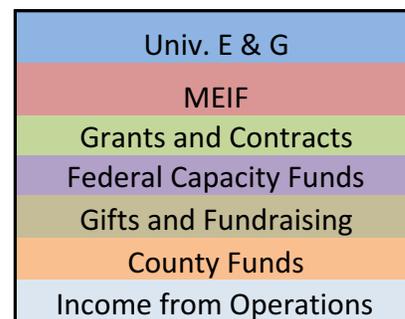
Statewide Extension Funding

As a unique partnership among federal, state and county governments, UMaine Extension uses funding from Maine counties and the University to match and leverage support from the United States Department of Agriculture, other federal grantors, state agencies and private foundations. Each county UMaine Extension office is also part of a statewide organization and the national Extension system.

This pie graph illustrates the financial resources for programs offered, supported and managed out of the York County office. Each year, York County tax dollars support the UMaine Extension with physical office space, support staff salaries, office supplies, equipment and some programming expenses.



Funding - 2017



Statewide Highlights – Maine Food System

Helping Grain Growers Expand to Serve High Value, Specialty Markets

The growing demand for locally grown and processed small grains, such as barley, oats, rye, and wheat, represents an economic opportunity for Maine’s farmers. Current and aspiring small grain farmers face a continuing need to improve their skills and capacities with grains that meet the quality standards of high-value specialty markets such as baking, brewing, and distilling for human consumption, as well as organic feed for dairy and egg production.

Grain farmers, processors, and buyers improved their skills, markets, and business viability as a result of Extension’s *Local Grains Program*, including growing a new crop, changing a fertility, weed, or disease practice, and improving cleaning, drying and storage systems. These changes resulted in improved grain yields and quality, enhanced farm or grain business viability, and improved family quality of life. For organic small grains, production, yields, and value have increased dramatically in Maine over the last 5 years.

In 2016

- 2/3 of the processors reported having increased purchases and developed new sources and markets
- Maine grew 3.6 times more organic small grains compared with 2011 (1423 vs. 498 tons), on 2.5 times more acres
- 20% increase in yield
- \$800,000 total value of organic small grains and pulses produced by Maine farmers

Researching Hops as a Maine



Crop and Supporting Growers

Maine is home to 60 breweries producing over 200 beers, and is a leader in the production of craft beers. Yet most of the ingredients are imported into the state, including the hops that give our products their unique character. Developing a sustainable hops industry in Maine to supply the brewing industry will enhance product appeal and reduce reliance on imported ingredients. Maine breweries added \$228 million to the state’s economy in 2016 and employed 2177 people.

UMaine Extension established a hops variety trial and demonstration planting at the Maine Agricultural Experiment Station at Highmoor Farm to determine suitable types and production practices in Maine and conducted an Extension Hops to educate new and potential grower.

Over 40 growers and potential growers visited the hops trial site. Eighty-nine new growers and potential growers attended the hops school, and 20 attended the hops twilight meeting. As a result of the trainings at least three new commercial hops plantings are being established, and a hops grower association is forming. Eighteen of the people attending the hops school intend to start a commercial hops yard within the next 3 years. Portland-based Allagash Brewing Co., which used over 115,000 pounds of local grains in 2017, has pledged to use 1 million pounds of Maine-grown grains annually by 2021.

60 Maine breweries

\$228 million
added to Maine’s
economy annually

200 local beers

Meeting the Demands of New and Emerging Milk Markets

U.S. organic agriculture operations are rising, with USDA data showing a 13 percent increase in certified organic farms and businesses between 2015 and 2016. With this growth, organic dairy processors and farmers are expanding into what used to be a niche market. A UMaine Extension assessment of organic dairy farmers in the Northeast revealed that to meet the demands of new and emerging markets these farmers need to extend the grazing season and implement practices consistent with entering the value-added milk market.

To extend the grazing season while improving the nutritional quality and content of omega-3 fatty acids in forage-based diets, Extension developed and assessed multi-cultivar mixtures of cool season perennial grass and legume species, and evaluated cool and warm season annual forages through agronomic research. We also assessed the utility of supplemental ground flaxseed to further bolster health-beneficial fatty acids (omega-3 and conjugated linoleic acid - CLA) and enhance the marketability of organic milk. Our findings were shared with farmers.

“Working closely with this program helped me reduce grain purchases by 25% and helped put more money back in my pocket”.

“Help from this program allowed us to apply soil amendments that boosted yield and quality.

We went from a deficit of feed to a surplus of hay in just one year”.

As a result:

- Over 100 northeastern organic dairy farmers transitioned their milking cows to high-forage or forage-only diets.
- Over 200 northeastern organic dairies adopted or fine-tuned the use of annual forage crops to extend the grazing season.
- Fifty of the dairy farmers interviewed reported increased milk production and milk quality and reduced grain/feed purchases, with farmers saying improved forage yield and quality were the major contributors to these outcomes.
- Over 6,000 acres of organic summer annuals have been planted in NH, ME, VT, PA, and NY.
- Milk content of omega-3 fatty acids and CLA increased an average of 76 and 42%, respectively, in cows fed ground flaxseed compared with those not receiving flax supplementation.

Master Farmers and Dairy Grazing Apprentices

Maine has an aging population of dairy farmers. Dairy farming is an occupation that is both physically demanding and difficult to enter without significant capital. Dairy is important to the state since it serves as a major supporter of many agricultural support businesses.

Many organizations have partnered to find ways to help this industry, including Maine Farmland Trust, MOFGA, Dairy Industry Association, Land for Good, and UMaine Extension. In 2016, supported by a grant from Stonyfield Yogurt, Wolfe's Neck Farm (WNF) initiated the organic dairy training program to try to train a new generation of dairy farmers. WNF partnered with the Dairy Grazing Apprenticeship (DGA) to provide a two-year training program with education coordination from Extension.

Currently there are six Master Farmers in Maine, and five apprentices and WNF apprentices who are completing a two-year, 4,000-hour training program. As an example of the utility of the program, a small organic dairy farmer recently was severely injured in a farming accident. WNF was able to work with Organic Valley, Extension, and the DGA program to provide trained apprentices to the farm to enable it to stay in business during the farmer's four-week recovery. Without DGA support they likely would have had to sell the cows.



Cooperative Extension Diagnostic and Research Laboratory

Accurate and early detection of animal diseases is important in limiting or eradicating the impacts of disease. With Maine's continued growth of small farms getting animal health information into the hands of farmers is vitally important, as is having a state conduit for veterinarians to learn about livestock disease.

The Cooperative Extension Diagnostic and Research Laboratory serves the state's veterinarians, livestock producers, and animal owners by performing diagnostic services that include necropsy, microbiology, virology, pathology, and special research support. Through Extension it links with industry to help control animal health related problems. A new Cooperative Extension Diagnostic and Research Laboratory will expand services to serve Maine's over 8,000 farms.

In 2017, the lab tested over 10,000 samples, the majority of which were from farm animals. It tested over 7,000 poultry samples and over 3,000 milk samples, thus allowing farms of all sizes to operate with more assurance of healthy animals and healthy products. Poultry farms were able to meet their FDA-requirements for salmonella testing locally. Sheep and goat owners were able to find out whether their animals have enteric parasites, and what to do about it.

Salmonella Testing at the Cooperative Extension Diagnostic and Research Laboratory

Maine has a poultry industry worth \$38,983,000. For any of Maine's 8,200 farms that raise hens to sell eggs, testing for salmonella, especially *Salmonella enterica subspecies enteritidis* (SE), is a prudent plan. Mid- to large-scale farms are required by the FDA to test their environment for SE. UMAHL's National Poultry Improvement Plan (NPIP) certified salmonella testing allows Maine poultry farms to meet FDA standards for *Salmonella enterica enteritidis* (SE) screening.

The Cooperative Extension Diagnostic and Research Laboratory provides timely and continuous access to SE testing to large and medium-scale poultry producers. The outcome of this work protects public health via prevention of human salmonellosis (SE) that might be acquired through eggs; it is estimated that the cost to the egg industry of an SE outbreak could be higher than 10% of production.

Master Food Preservers

Economic sustainability of farms is a daily issue faced by farmers, who understand that profitable farms are

sustainable farms. Consumer purchasing power can significantly impact the profit base for farmers. Home food preservation education programs can increase consumer sales and ultimately profitability of farms by influencing point of purchase consumer behaviors to preserve (freeze, can, dry) fresh produce to use in the "off-season" to increase access to local foods.

UMaine Extension adult and youth food preservation education efforts are extended through our Master Food Preservers program. Master Food Preservers serve as volunteers and a community resource to provide the public with research-based information from Extension and USDA. In 2017, 64 Master Food Preserver volunteers contributed over 760 hours of food preservation education and community projects, reaching over 2190 people in 9 Maine counties. Volunteers taught 86 preserving workshops, staffed educational displays, and demonstrated at farmers' markets, harvest festivals, agricultural fairs, and local food events.

The time volunteered by Master Food Preservers is the equivalent of over \$18,000 in wages.

64 Master Food Preservers

760 volunteer hours

2,190 people in 9 Maine counties

Volunteer hours = \$18,000 in wages

So You Want to Farm in Maine?

Current farmers thinking about changing farm enterprises and new farmers interested in starting a farm often lack



skill, knowledge and confidence in areas such as access to

capital, rules and regulations affecting agriculture operations, and marketing.

Since 2011, UMaine Extension has provided diverse educational outreach through its “So You Want to Farm in Maine” series to enhance the skills, business management knowledge, confidence of new and established farmers. Extension programs are live, live-streamed and archived, and have reached 754 participants from all Maine counties and out-of-state. Topics include agriculture enterprise selection, business planning, record keeping, market research, regulations, and resource identification.

The series trains people to pursue farming as a viable career option.

- 69 percent increased knowledge about the importance of developing a business plan and the items a farm business plan should include.
- 67 percent increased knowledge about where to look for resources and information about their farm enterprise of interest including web resources, government agencies, universities, and other organizations.
- 67 percent increased knowledge about production and financial recordkeeping and the different methods that can be used including paper and electronic records.
- 64 percent increased knowledge about market research techniques that they could implement to refine the knowledge of markets for their agriculture products.
- 56 percent increased knowledge about the rules and regulations affecting agriculture enterprises and the agencies that enforce them.

Many students have already implemented new practices. As a result of attending the program the number of farmers increased from 27% to 73% and 3-4 people worked on the farm. In the fourth year, when the training qualified as FSA borrower training, farmers with FSA loans were able to complete their loan requirements and received nearly \$313,000 in farm loans.

Supporting Maine’s Potato Industry

The \$500 million potato industry is the largest agricultural sector in Maine, encompassing over 500 businesses generating over \$300 million in annual sales, employing over 2600 people, and providing over \$112 million in income to Maine citizens. The management of insects, diseases, weeds, and other pests is integral in sustaining a healthy Maine potato crop. Potato growers are increasingly relying on a multidisciplinary Integrated Pest Management (IPM) approach to ensure that Maine’s potato crop is pest and damage free while attempting to minimize the amount of pesticides that are applied.

UMaine Extension's Potato IPM Program impacts Maine’s 300 commercial potato growers and 48,000 acres of potatoes and has become an integral part of the Maine Potato Industry. The program also broadly impacts national and international growers who rely on the state’s seed crop. The project maintains nearly 100 specialized insect traps, coordinates a statewide network of electronic weather stations, and surveys 75 potato fields on a weekly basis for weeds, insects and diseases. IPM scientists track potential pest outbreaks to provide growers with current information on treatments to minimize the number of pesticide applications and maximize potato yield.

The economic impact from Extension’s pest monitoring and educational programs for the 2017 season is estimated at over \$8.8 million.



Statewide Highlights – Community & Economic Development

Supporting Local Business Expansion

The goal of UMaine Extension's Food Safety programs is to ensure a safe food supply while reducing foodborne illness risks by teaching proper sanitation, food preservation, and food-handling practices. To that end Extension educators, specialists, and professionals conduct a variety of programs for Maine citizens and food businesses. In 2014, a gourmet gelato business, Gelato Fiasco, was operating out of a small commercial facility producing about 2,000 units a day, with 10 full time employees. The business' sales had increased and they required an expansion of their current facility.

From 2014 to 2017 Extension staff provided technical and educational support to assist with general food safety, quality, sanitation, facility design, and regulations. UMaine Extension assisted the business with designing a new 10,000 sq. ft. facility, including scale-up and sourcing processing equipment. Gelato Fiasco is now safely producing and selling over 13,000 units per day out of their newly expanded facility and employing 24 full-time employees.

Facilitating Community Planning to Support Affordable Housing

Housing costs in southern Maine coastal communities are largely unaffordable to the local community's workforce, with the majority of residents spending more than 30% of their income on housing.

UMaine Sea Grant and UMaine Extension facilitated a planning process with the Workforce Housing Coalition of the Greater Seacoast, the Town of Berwick, and community members. Workshops were held to engage the community in conversations about the disconnect between income and housing costs and the need to plan for the housing needs of the community's workforce.

As a result of the workshops, recommendations were made to the community's redevelopment plans. Community planning and actions provided the town with new resource and ideas, and a vision for the future that has attracted significant funding and investors. The Town applied for a U.S. EPA Brownfield Program grant, and was awarded \$600,000, the largest single site grant in the history of the Brownfields grant program nationwide.

Parent Education: Laying the Foundation for Future Success and Wellbeing

The first three years of a child's life are a critical time for growth and development. Investing in children, starting with the earliest years, produces significant long-term impacts for individuals and communities from reduced child abuse and neglect, lower health care costs to school success and better employment.

UMaine Extension Parenting Education Professionals are part of a statewide network of *Maine Families Home Visiting Programs*. In 2017, Extension's two Maine Families Programs were endorsed by the Parents As Teachers National Center as exemplary Blue Ribbon Affiliates, delivering high-quality services to children and families. This makes both programs among the top performing early education and home visiting affiliates within the international Parents as Teachers network. Families receive services including home visits, group connections, child screening and connections to community resources, knowledge and resources to prepare their children for a stronger start in life and greater success in school.

Results:

- 79 percent of infants were breastfed at 6 months.
- 93 percent of primary caregivers were screened for depression.
- 91 percent of caregivers who used tobacco at enrollment received tobacco cessation referrals.
- 100 percent of children with positive screens for developmental delays received services in a timely manner.
- All enrolled families were assessed for basic needs and referred to services as appropriate.

10 Parent Educational Professionals

2,414 home visits

271 families

Homemakers Promoting Community Based Adult Education

Extension Homemakers is a volunteer group that develops leadership skills, supports community causes, and promotes UMaine Extension's educational programs in nine Maine counties. These organized programs are part of the statewide network of Extension Homemakers that participate in educational programs, and identify community projects, such as providing assistance to local food pantries or nursing homes or veterans groups, funding educational scholarships or youth camp programs.

In 2017, over 600 Extension Homemakers from over 40 Local Extension Homemaker Groups met and delivered or engaged in Extension programming involving over 3,100 participants and 321 programs including food, personal and community; nutrition and health; gardening and environmental, financial planning and consumer; personal growth; and cultural and creative arts.

In many Maine counties Extension Homemakers remain a traditional and vital part of the community fabric. They provide direct and indirect benefits in terms of volunteer hours, fundraising, and material donations. In 2017, the total estimated monetary value of the Extension Homemaker program to their communities was over \$541,000.

600 Extension Homemakers

\$541,000

monetary value to their communities

College Students take Action on Food Insecurity

Since 2014, UMaine Extension has collaborated with the Maine Campus Compact to hold annual Maine Hunger Dialogues, inviting all Maine colleges and universities to send students and staff to learn about hunger on local, national, and global scales, and to leave with ideas and action plans for ending hunger in their regions. The events promote inter and intra-campus networking to capitalize on the diverse group.

In 2017, 80 student and staff from 14 campuses attended the Maine Hunger Dialogue where they developed new partnerships, assessed community needs and assets, and set goals and steps to reach them. Eleven teams successfully applied for Maine Hunger Dialogue grants to support new and existing initiatives. Teams used the funds to develop food recovery networks, initiate food pantries and resource hubs, donate fresh produce to food insecure students, conduct food drives and hunger awareness initiatives, host cooking on a budget and nutrition courses to food insecure adults and children, supported income refugee and immigrant residents with a healthy cooking workshop series, and helped build capacity between students and local Native American residents through providing a nutrition and food preservation workshop series. "Meal food pack-outs" (packaging healthy nonperishable meals) held at UMaine packed 107,562 meals that were distributed to food insecure students and community members.

Through the Maine Hunger Dialogue, Extension has strengthened partnerships with Maine Campus Compact, Good Shepherd Food Bank, Maine Corporations, UMaine System campuses, and other Maine Institutions of Higher Education.



Analyzing Cruise Ship Tourism in Bar Harbor

Cruise Ship tourism is one of the fastest growing segments of Maine's tourism industry. In 2016, 377 cruise ships, carrying 283,000 passengers were scheduled to visit Maine's twelve ports, up 6 percent from 2015. Maine's busiest port, Bar Harbor, has experienced remarkable growth, hosting 117 cruise ships carrying 163,000 passengers in 2016, a 36 percent increase since 2002. While the cruise ship industry is growing rapidly, little is known about the current demographic characteristics of these passengers or what their economic impact is on the Bar Harbor area economy.

The UMaine School of Economics and UMaine Extension examined the economic impacts of cruise ship passengers visiting Bar Harbor. The study found that cruise ship passengers spent an average of \$108.21 on goods and services in the town of Bar Harbor during 2016. The total annual economic impact of cruise ship passenger spending, including multiplier effects, was over \$20 million in sales revenue throughout the Bar Harbor area. Economic activity associated with this spending supported 379 full- and part-time jobs, and provided \$5.4 million in wages and salaries. The results of this research were presented to the Bar Harbor Town Council, posted to the town's website, and widely disseminated through television, radio, newspaper, Internet, and town meetings. Small business merchants in Bar Harbor have found the report very useful to their cruise ship passenger marketing efforts and local policymakers have used it to educate the public about the economic importance of cruise ship tourism to the Bar Harbor economy, especially during the shoulder seasons.

379 full- and part-time jobs

\$5.4 million in wages and salaries

\$20 million in sales revenue throughout the Bar Harbor area.

Providing Access to Capital: \$8 Million Invested in Local Communities

Aspiring and existing entrepreneurs need capital to start, improve and expand their businesses to create good paying jobs for Maine people. Many business owners are challenged to secure adequate funding from traditional lenders to start or expand a business. However, by partnering with a regional economic development organization, traditional lenders like banks are able to increase access to capital for Maine businesses that otherwise would not be eligible for financing.

UMaine Cooperative Extension supports improved access to financing for Maine business through its collaboration with a regional economic development agency that provides SBA loan guarantees for prospective borrowers. As an active member of the Loan Review Committee, Extension provides guidance and oversight on credit and lending strategies, reviews loan applications and along with other business and community leaders arrives at a loan recommendation.

In fiscal year 2017 the Loan Review Committee approved 33 loans of over \$3.2 million to 29 businesses. Over \$4.9 million was leveraged bringing the total investment to over \$8 million. Forty-eight jobs were created or retained, and seven of Maine's 16 counties benefited from the program.



Tech Wizards Students Helping Solve Real Community Problems

Tech Wizards is a youth mentoring program that uses STEM (science, technology, engineering and mathematics) education and service learning to help youth learn life and workforce skills, improve academic performance, and aspire to post-secondary education, productive careers, and community engagement.

Students from Captain Albert Stevens Elementary School in Belfast are working with local naturalists, biologists and a drone pilot to survey and map their local watershed to gather and share data about the health of Wescott Stream, where they will release classroom-raised salmon in 2018. Native salmon are currently listed as endangered under the Endangered Species Act. Through Tech Wizards, the students joined their science teacher and 4-H mentors and:

- Used videography and photography to record findings from water quality tests and biotic indices for evaluation by the scientific community, and used a local drone pilot to identify and mapped species vectors and barriers to salmon migration.
- Researched several aquatic habitats using field guides.
- Critically evaluated the veracity of their research and received feedback from local experts.
- Practiced nature drawing techniques with a local naturalist.
- Developed a new outdoor classroom at Tanglewood 4-H Camp and Learning Center as a community service project.
- Were introduced to career opportunities within science, technology, and art.

Statewide in 2017, Maine's Tech Wizards program matched 275 students with community mentors in 7 schools. Students participated in ongoing fieldwork, citizen science initiatives, and service learning and were empowered to engage with their communities and contribute their time and skills to address important scientific questions, and to recognize that environmental stewardship is both the platform for their learning and an overarching life ethic.

4-H Youth Voice: Youth Choice

In Maine, 28 percent of youth are overweight or obese and 17 percent of children under age 19 live in poverty. One of the most common and preventable risk factors for premature death is consuming too few fruits and vegetables. In 2009, 72 percent of Maine adults consumed less than five servings of fruits or vegetables per day, while only 20 percent of Maine middle school students and 15 percent of Maine high school students consumed five servings of fruits or vegetables per day. In 2015, only 19 percent of Maine adults were meeting minimum recommendations for physical activity.

UMaine Extension implemented the national 4-H Youth Voice: Youth Choice program to mobilize under-served youth to take action around nutritional deficiencies, healthy food choices, and physical activity. The goal is to train 50 teen teachers to educate 2000 underserved youth about nutrition and physical activity, to change knowledge, attitudes and behavior so youth will make healthy food, physical activity and lifestyle choices to reduce the risk of obesity and chronic disease later in life. A second goal is to create supportive community environments where healthy lifestyles are the norm.

Of teen teachers participating in Maine YVYC:

- 88 percent reported eating more fruits and vegetables.
- 66 percent reported eating less junk food.
- 71 percent reported drinking less soda.
- 88 percent reported drinking more water.
- 93 percent reported learning cooking skills to prepare healthy foods at home.

Of youth participating in Maine YVYC:

- 91 percent reported eating more fruits and vegetables.
- 81 percent reported eating less junk food.
- 88 percent reported drinking more water.
- 70 percent of youth participants reported being physically active for 60 minutes every day.
- 90 percent agreed that being active is fun, and will help them stay healthy.

Meeting Learning Standards through Lakeside and Open Air Classrooms

Educators in Maine K-12 schools are tasked with aligning their lessons in meaningful ways with local and national learning standards. To succeed in meeting standards and improving student learning, teachers are looking beyond the walls of their classrooms to integrate different academic content areas and engage students in active learning environments. Gardens, vernal ponds, forested land, and outdoor classrooms have become more popular at schools across Maine, but teachers often lack the professional support to know how to best use these spaces to incorporate curricula.

UMaine Extension's 4-H Camp and Learning Centers' Open Air Classrooms (OAC), at Tanglewood, Blueberry Cove and Lakeside Classroom at Bryant Pond provide residential, nature and school-based programs that help schools to meet learning standards.

In 2017, the 4-H Camp and Learning Centers conducted Lakeside and OAC programs and with over 5,000 students from 100 Maine school groups. Teachers find the OAC a valuable complement to their traditional classroom.

4-H@UMaine Gives Youth a Preview of the College Experience



Education after high school is critical to supporting skilled jobs in Maine. Engaging youth in getting college degrees helps to grow and strengthen Maine's businesses and economy. Unfortunately, the number of Maine high school graduates enrolled in higher education lags at 40th in the nation. Although research recommends beginning to address college and career aspirations in elementary and middle grades, coordinating access to a college campus presents barriers for rural Maine communities.

UMaine Extension created 4-H@UMaine to provide a safe and supportive environment for Maine youth grades 6-12 to experience life on a college campus. Participants come to the UMaine campus and imagine the possibility of college attendance as they stay in campus residence halls, eat in the dining commons, get active in the student recreation center, and participate in hands-on workshops with UMaine students, staff, and faculty. While they are there, Extension also fosters healthy relationships using small-group settings led by trained adult leaders and teenage peer mentors.

In 2017, 4-H@UMaine hosted 55 youth (grades 6-10), 15 Teen Leaders (grades 9-12), and 27 adult staff and volunteers. In addition to the traditional youth experience for grades 6-10, college-ready teens took part in an exclusive experience that included pre-event training, planning roles as youth mentors, and workshops to further develop leadership skills and connect with campus staff. Of those attending 4-H@UMaine:

- 92% of all the youth indicated they learned about new career possibilities, helping to raise their career aspirations.
- 91% plan to go to college.

4-H Ambassadors Sparking Student Interest in STEM Careers

Relevant, meaningful, and authentic experiences in science, technology, engineering and math (STEM) are important to developing positive attitudes, increasing knowledge, and preparing Maine youth for the estimated 9 million STEM-related occupations projected between 2012 and 2022. Developing Maine youth's STEM literacy is vital to ensuring that our state continues to thrive economically and socially. Given the remote and diverse communities to which Maine youth belong, informal education can help minimize inequities in rural youth STEM education and career pipelines.



In 2015, with the support of the UMaine System, UMaine Extension created the 4-H STEM Ambassador program, which trains college students as caring mentors to youth, and who facilitate STEM activities with them, and help them learn about college and careers.

Through this program, youth ages 8-14 come to view these Ambassadors as mentors and leaders in their community while also developing skills in STEM through hands-on activities. The program increases student leaders' knowledge, and ability with facilitating STEM activities. It also increases university engagement in local communities that UMaine has not traditionally reached. Youth were excited that someone from UMaine came to share STEM activities. Student participants reported that without this program their instructional time with STEM would be reduced. As a result of this program participating youth have demonstrated positive attitudes, increased knowledge, and expanded interest in STEM and STEM careers.

The County Extension Act

The County Extension Act explains the role of county government in funding local Extension offices.

Cooperative Extension work shall consist of the giving of practical demonstrations in agriculture and natural resources, youth development, and home economics and community life and imparting information on those subjects through field demonstrations, publications and otherwise. For the purpose of carrying out this chapter, there may be created in each county or combination of two counties within the State an organization known as a “county extension association,” and its services available to all residents of a county. The county extension is viewed as a unique and important educational program of county government. The executive committee of each county extension association shall prepare an annual budget as requested, showing in detail its estimate of the amount of money to be expended under this chapter within the county or counties for the fiscal year. The executive committee shall submit to the board of county commissioners on a date requested by the county commissioners, and the county commissioners may, if they deem it justifiable, adopt an appropriate budget for the county extension program and levy a tax therefore. The amount thus raised by direct taxation within any county or combination of counties for the purposes of this chapter shall be used for the salaries of clerks, provision of office space, supplies, equipment, postage, telephone, a contribution toward the salaries of county educators and such other expenses as necessary to maintain an effective county extension program.¹

¹Excerpted from Title 7, Chapter 7 of the Maine Revised Statutes, §191–§195.

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