



Color photos by Edwin Remsberg

*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.*

# **University of Maine Cooperative Extension Washington County Annual Report 2015-2016**

## Washington County

*UMaine Extension is your doorway to University of Maine expertise. For more than 100 years, we've been putting university research to work in homes, businesses, farms, and communities—in every corner of Maine. Our educational efforts focus on the **Community and Economic Development, Maine Food System, and Positive Youth Development.***

### Community and Economic Development

#### Recipe to Market: Is it for Me?

This introductory ½ day workshop was presented in Machias to participants thinking about starting a specialty food business. The program consisted of an overview of the specialty food industry that included a demographic profile of the typical specialty food consumer, industry trends, and the challenges and opportunities of starting a specialty food business. The program also provided key tips for business success and information on product development and food safety.

#### Pricing Products and Services

This intensive 3-hour workshop was presented to participants wishing to establish a profitable price for their products or services. The program is designed for either existing or aspiring business owners who want to create a price structure for their product or service that will cover their costs, provide a reasonable profit and encourage customers to buy.

#### Business Consultations

Free individual and confidential business consultations are available to aspiring or existing business owners wishing to address an issue or concern about starting or expanding a business.

University of Maine Cooperative Extension's successful educational programs result from a federal, state and county government partnership. Since 1919, when the Maine Legislature passed the County Extension Act\*, the University of Maine has been in all Maine communities with a county office whose operations are funded by county government. Our educational programs anticipate and respond to local and state needs and issues. We also communicate those issues and opportunities to UMaine faculty to influence their research and development plans.

#### **A sampling of our educational program areas:**

- 4-H
- Agriculture
- Business & Community
- Food & Health
- Gardening & Horticulture
- Home, Family & Youth
- Insect & Plant Disease Management
- Maine Food System
- Natural Resources
- Safety & Preparedness

### Senior Companion Program

Twenty Senior Companions volunteered to help older adults maintain their independence through companionship, transportation, providing education and being a friendly visitor. Last year, Senior Companions spent 12,897 hours helping 78 clients. Senior Companions receive a small stipend if they are income eligible which helps supplement their income. The stipend brought nearly \$47,000 to the Washington County Senior Companions. Senior Companions also receive monthly training. Over the last year, they participated in training on prescription drug safety, senior sustenance resources, and preparing for emergencies. They shared this information with their clients.



Senior Companion volunteers at a monthly training.

### Washington County Extension Homemakers Association

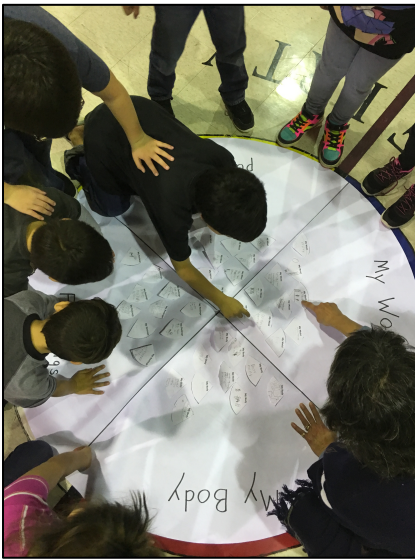
Extension Homemaker group members help to extend the resources of the University of Maine Cooperative Extension into their communities through educational opportunities and service projects. The 15 members of Washington County Extension Homemakers Association gathered eight times to learn about travel, Maine, emergency preparedness, herbs and crafts.

## County highlights *continued*

### Maine Food System

#### Diabetes and Obesity Prevention

Diabetes rates are alarmingly high amongst the members of the Passamaquoddy Tribe. Eighteen percent of all adults, and 49 percent of those between the ages of 45 and 64 years, have been diagnosed. In response, UMaine Extension collaborated with the Pleasant Point Health Center, Beatrice Rafferty Elementary School and the Head Start Program, to present the twelve-session adaptation of *Health is Life in Balance, Diabetes Education in Tribal Schools* to 75 children in preschool through second grade. After completion, students were able to recite concepts of balance between body, mind, feelings and world; balance between diet, physical activity and body fat; description of diabetes; and how to prevent diabetes through healthful eating and physical



Students from Beatrice Rafferty participate in Diabetes education.

activity. They also reported being motivated to act on what they learned and sharing what they learned with family members. Education on sugar sweetened beverages, obesity and diabetes was also presented at the Pleasant Point Health Fair.

#### Dining with Diabetes Down East

Washington County has high rates of diabetes, diabetes-related hospitalizations, diabetes-related lower extremity amputations and diabetes-related deaths. Few Washington County residents participate in self-management education and support programs to develop the skills needed to care for themselves. Barriers to participation include cost, lack of insurance, complexity of education programs and the absence of formal diabetes education programs in the county.

Since inception of the program in 2014, the Dining with Diabetes Down East program has been presented in eight communities to a total of 147 people. Fifty-nine have participated in the three programs presented between July 1, 2015 and June 30, 2016.

The free program consisted of four weekly 2-hour classes. Each session included a presentation, cooking demonstrations, sampling of dishes and facilitated discussion. In the initial evaluation, 94% reported lowered weight, blood sugar, blood pressure or cholesterol. Participants expressed appreciation for making the program easily accessible and reported many positive changes to their diets. Moreover, all reported that as a result of program they positively influenced diets of spouses, children or grandchildren.

Based upon published research, the program will likely result in decreased disability, death and health care costs. As an example, for an individual on Medicare, approximately \$96,000 is saved in

#### Local Partnership

Our **County Extension Association** is the vital link between the county, our communities and UMaine. The Association's Executive Committee is comprised of local **volunteers** who represent community interests by advising UMaine Extension staff on educational programs, advocate for and secure funding from county government to support the county office, oversee the office budget and facilities, and guide **UMaine Extension staff** in identifying their programming goals.



## County highlights *continued*

Medicare costs for each year hemodialysis is postponed due to improved diabetes control. Hannaford provided funding for food and supplies.

### **Support for Cranberry Farmers**

Extension's cranberry scientist provides on-site pest management assistance and education to our county cranberry growers. Our cranberry scientist will also be presenting an on-site workshop for cranberry growers entitled, "Cranberries and a Changing Climate" which will examine the latest climate change projections and how those changes would likely affect cranberries in Maine.

### **Assisting Wild Blueberry Growers**

University of Maine Cooperative Extension Educational program provides research based knowledge to wild blueberry growers in Washington county which is the largest production county in Maine with 75% of the acres contributing 188 million dollars to the Maine economy.

The 2016 Wild Blueberry Spring Grower Meeting was held on Saturday, March 26, 2016 at the University of Maine Machias. Highlights of the program include lectures on the world blueberry crop situation, new blueberry crop insurance options, and a demonstration on the computer sprayer calibration program.

Wild blueberry field training sessions were offered on April 27, May 25 and June 29, 2016 at Blueberry Hill Farm Experiment Station to demonstrate and discuss the Integrated Crop Management (ICM) field scouting techniques in Wild Blueberry Fact Sheet No. 204. The first and second session covered mummy berry blight identification and monitoring, insect sweeping and identification, and weed identification and management. The third session covered blueberry maggot fly trapping, spotted wing drosophila ID and trapping, leaf and soil sampling, and weed identification and management.

### **Master Gardener Volunteers Make a Difference in Washington County**

In 2015, a total of eleven Master Gardener Volunteers worked in Washington County to assist fellow community members through community

projects, reaching 133 people. The projects included two gardens for emergency food relief (Machias, Cherryfield), two educational historic garden projects (Machiasport – Gates House, and Pembroke – Historical Society). Collectively, Washington County Master Gardener Volunteers contributed 365 hours of labor valued at \$7,336 in 2015.

At the Maine Sea Coast Mission in Cherryfield and the UMaine Cooperative Extension Office in Machias, Master Gardener Volunteers (MGVs) grew over one ton of fresh produce for food pantries.



Master Gardener volunteers work in a garden to help grow produce for those in need.

### **Engaging Students in Fisheries Science**

Marine Extension Team member Chris Bartlett coordinated an alewife-monitoring program with the Town of Pembroke and Maine Department of Marine Resources. Numbers of alewife returning to the Pennamaquan River have increased from 70,000 fish in 2014 to over 250,000 in 2016 due, in part, to the team's management efforts. Chris invited six Washington County grade schools to learn about fisheries science at the project site. 137 students and 18 teachers participated in these field trips that provided hands-on learning about scientific methods to assess fish populations. These outings were held in partnership with Island Readers and Writers' program entitled Alewives: Small Fish, Big Impact. Chris also hosted field trips for 58 undergraduate students and six faculty members from two colleges to learn about the

## County highlights *continued*

project. Participating schools were Beals Elementary School, Beatrice Rafferty Elementary School, Edmunds Consolidated School, Jonesport Elementary School, Shead High School, College of the Atlantic, and University of Maine.



Students learn about scientific methods to assess fish populations.

### **Coordinating Prevention of Infectious Salmon Anemia**

Infectious Salmon Anemia (ISA) is a viral disease of Atlantic salmon that caused devastating losses in Maine's aquaculture industry during the early 2000s. University of Maine Cooperative Extension teamed with salmon farmers and resource managers to design best management practices that ceased the spread of ISA in 2006. Chris Bartlett, Marine Extension Team member, has reprised his role as Chair of the ISA Technical Board to update procedures for preventing the disease. ISA virus has recently been detected in neighboring New Brunswick, Canada. The ISA Technical Board serves as an advisory body for the United States Department of Agriculture and Maine Department of Marine Resources and has members from industry, academia, and resource agencies with expertise in animal health and finfish aquaculture.

**Signs of the Seasons: a New England Phenology Program (SOS)**, co-coordinated by UMaine Extension and ME Sea Grant, is a citizen science program looking at the timing of life cycle changes in plants and animals across our region. Our goals are to increase climate literacy and provide valuable data to resource managers and researchers regarding how our climate in Maine is changing. We have held trainings for 19 teachers and 20 students in 2014 and 2015 with the Down East Institute (DEI), working in partnership with DEI.

The trainings taught teachers and students about the importance of rockweed (*Ascophyllum nodosum*) found in the intertidal -- both about the reproductive phases and the importance as a habitat for other marine species. They also learned about measuring temperature and salinity which affects the reproduction of the rockweed.

**Introduction to Beekeeping** returned to the University of Maine this year and saw 22 students enrolled. Participants in the five-week class (and field day) learned how they could keep bees at home, concentrating on assessing colony health. They also learned about the many different products of the hive.

**Intermediate Beekeeping** was held for the first time in Washington County for eleven participants. The class was intended for students with several years of beekeeping experience. The classes consisted of a lecture followed by symposium style discussion. Topics included beekeeping resources, reading pesticide labels, bee having versus bee keeping, and the different medications for dealing with the Varroa mite. Students did research and reported on their research to the class.

### **Positive Youth Development**

**4-H** is a national organization for youth ages 5-18 to learn life skills through hands-on project-based work. The University of Maine Cooperative Extension conducts the most successful out-of-school educational program in Maine. As the youth development arm of UMaine Extension, 4-H has always emphasized the importance of building the life skills needed to be successful adults. Today, 4-H also is focused on science and technology to help foster interest in these areas as avenues to successful careers. 4-H makes science fun and exciting for everyone. The Washington County 4-H program reached 420 youth with the help and support of 34 volunteers.



4-H members show their chickens at the Perry Harvest Fair.

## County highlights *continued*

### Tech Wizards

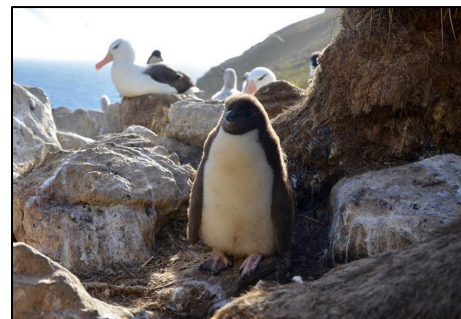
A Tech Wizards grant has allowed Tanglewood 4-H Camp and Learning Center mentors to connect with twenty-eight 4th, 5th and 6th grade science classes at Beatrice Rafferty School bi-weekly via Tandberg video conferencing. Science teachers provide insights about what their classes are covering, and Tanglewood broadcasts interactive activities via Tandberg during science classes. For example, the 6th graders are studying Astronomy, so they have worked on creating a creature perfectly adapted to living on the moon, made kinesthetic models of moon cycles and positions of the sun relative to the constellations, and pondered the reasons for space exploration. Twenty-one students ended the school year by visiting the camp and learning center for a three-day, two night overnight program. Their visit was perfectly timed with the annual alewife migration up the Ducktrap River, one of Maine's spawning areas for migratory fish. Students saw the migration up close, carefully treading on the rocks at some waterfalls to watch the alewives attempt to surpass the rapids. This experience helped students understand the difficulty of the fish's journey from the ocean to freshwater fishing grounds. Students also participated in seasonal FoodCorps programming centered around gardening. They planted seedlings to take home and recently reported that the seedlings are sprouting!

### Project WET (Water Education for Teachers) training at Cobscook Learning Center

Project WET (Water Education for Teachers) workshop was offered to 15 area educators from Shedd High School, Maine Indian Education, Axiom Educational Training, EdGE after school program, UMM, Charlotte Elementary, Machias Memorial High School, and Jonesport Elementary School. The teachers experienced several different activities related to water and storm water runoff, and were provided with a guidebook with over 60 field-tested activities. All participating educators also received full kits of materials and supplies to do six full activities with their classrooms! This training was provided through a National Science Foundation grant to the University of Maine.

### Follow a Researcher

Youth followed a UMaine student researcher, Kit, as she traveled to the Falkland Islands. Kit is researching the warrah, an extinct fox from the Falklands, trying to determine when the warrah first arrived on the islands. The Follow a Researcher project offered weekly question and answer sessions on with Kit on Twitter while at her research site! Using a DeLorme Satellite Communicator (along with solar panels, GoPro Cameras and other technology) Kit engaged youth in real-time conversations -answering their questions about her research, planning and executing a research expedition, being a student at UMaine, and the weather and food in the Falklands! Along with the live chats, we prepared video blogs about Kit's research, and how it aligns to Next Generation Science Standards Practices – these were released weekly, and helped guide the Twitter discussions. In all, 13 individual educators in Washington County participated with their 324 students.



Scenes from Follow a Researcher

### 4-H STEM Ambassadors

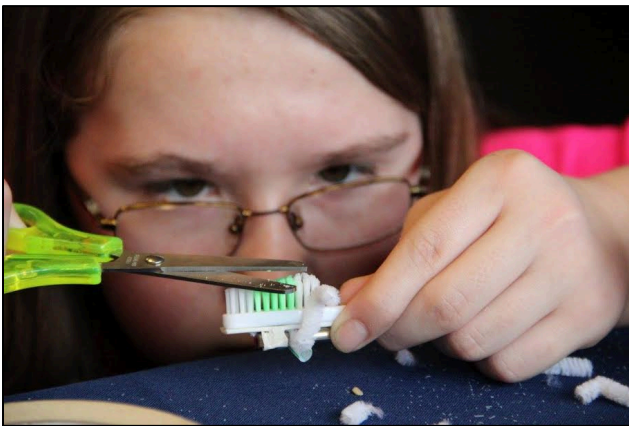
During the past academic year, University of Maine Machias placed 18 student 4-H STEM Ambassadors (4-HSA) at four EdGE afterschool programs to facilitate STEM activities with youth. While being hosted by Rose M. Gaffney School, Harrington Elementary School, Milbridge Elementary School, and D.W. Merritt School, 4-HSAs engaged 232 youth in hands-on learning opportunities in STEM

## County highlights *continued*

topics (environmental science and chemistry) with an emphasis on Positive Youth Development. UMM students participated in the program as part of coursework with Professor William Otto.

### **4-H Robotics Expo**

86 youth from 10 schools in Washington, Hancock and Penobscot counties participated in the 10<sup>th</sup> annual Expo. Youth between the ages of 9-14 practiced their public speaking skills, demonstrated their engineering and programming skills, and attended a variety of STEM-related workshops. Seventeen community volunteer judges each listened to 7-8 presentations and provided feedback. Youth demonstrated numerous life skills with team work and problem solving ranking as the top two skills while 92% of participants stated they felt confident during their oral presentations.



A 4-H Robotics Expo participant builds an ECO-Bot.

### **4-H@UMaine- Connecting Kids to Campus**

28 youth from Washington County attended 4-H@UMaine in April. Youth ages 12-17 become familiar with the University of Maine campus in Orono and what it has to offer. They stay in dorm rooms overnight, eat at the dining halls, and attend workshops presented by UMaine professors to get a real feel of what college can offer.

### **Machias STEM HUB**

The Maine Math and Science Alliance is partnering with Axiom Education and Training Center and the University of Maine Cooperative Extension 4-H program to pilot a model that supports local people who are passionate about education and science, to serve as informal science advisers and mentors to area youth. The project is focused on providing

STEM opportunities to 600 youth ages 10-18 years old in the greater Machias area over the next three years. Since September 2015, the Hub has served over 350 youth including events such as: Catapults and Modular Origami at the Downeast Lobster Drop, STEM Games Saturday at the Extension office, Winter Festival at Milbridge Public Library, Winter STEM Games and Ice Cream Science at Mano en Mano, Pi Day at Jonesport Elementary, Code Girl Movie Screening and Scratch Event at UMM.



4-H STEM Games Saturday

### **4-H Public Speaking**

One of the most valued life skills that youth gain in the 4-H program. We reached over 50 Washington County youth this year directly as well as teachers, volunteers, and parents with hands-on training to develop public speaking and communication skills. Our 4-H youth have the opportunity to participate in County and State 4-H Tournaments. Beginning in 2016, our youth 12 years of age and older who qualify and participate in the Maine 4-H State Public Speaking Tournament will have the opportunity to represent Maine 4-H as part of the Maine 4-H Communication Science Team at Eastern States Exposition in September of each year. Exciting new online training resources and videos continue to be added and are available online at:

<http://umaine.edu/4h/youth/public-speaking/>

### **4-H Schools**

We are actively partnering with seven Washington County 4-H Schools, delivering and supporting Food Systems, Public Speaking and STEM-focused programming in the classroom. We are especially excited about our new partnership with the EdGE program and their staff, which offers afterschool and out-of-school experiential programming to six

## County highlights *continued*

additional sites. We also started a partnership with Machias Memorial High School this year in conjunction with Food Corp. and Maine Math & Science Alliance. With over 500 youth being group enrolled in 4-H through our schools, we work with teachers to increase their access to experiential learning opportunities and resources that support their curriculum.



Students at a local school display their public speaking awards.

a distracted driving demonstration in a simulated activity that investigates the physical and human factors of motion. Twelve school site coordinators as well as teachers and volunteers were trained to deliver the activities as well as the activity being offered to the public at the Perry Harvest Fair as well as our Fall 4-H Awareness Day at the Calais Tractor Supply. Over 200 youth in Washington County were reached through the various sites.

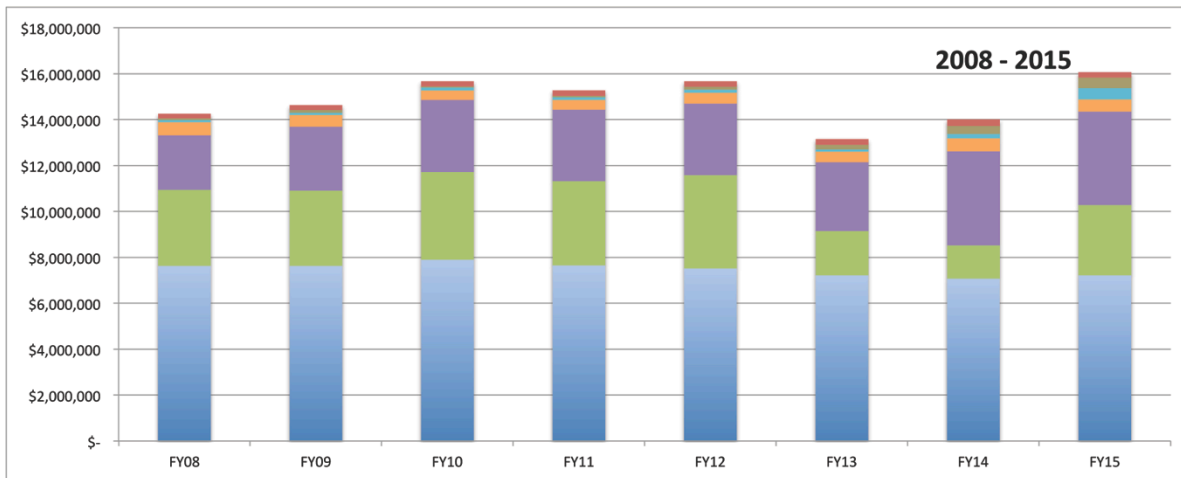
### Community Collaborations and Partnerships

We continued our collaborations with Maine Ag in the Classroom, FoodCorps and Farm to School with our 4-H School Groups, providing hands-on education targeting food security and sustainable-living skills. We also actively partnered with the EdGE Center to offer hands-on “Train the Trainer” clinics on our 4-H Science kits, expanding the delivery potential of our STEM resources. Through these partnerships, we are creating synergy and increasing our capacity to reach youth in underserved communities and schools.

### National Youth Science Day

This premiere 4-H Science event brings together thousands of youth, volunteers and educators from around the country. This year’s activity, Motion Commotion, combined a speeding car collision and

## Statewide Extension Funding



	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15
Univ. E & G	\$ 7,631,186	\$ 7,626,318	\$ 7,898,400	\$ 7,643,025	\$ 7,518,390	\$ 7,218,330	\$ 7,070,064	\$ 7,228,135
MEIF	\$ 199,958	\$ 213,794	\$ 212,984	\$ 232,663	\$ 226,199	\$ 243,272	\$ 279,893	\$ 233,186
Grants and Contracts	\$ 3,302,756	\$ 3,283,863	\$ 3,817,000	\$ 3,673,000	\$ 4,067,710	\$ 1,928,115	\$ 1,452,548	\$ 3,047,905
Federal Capacity Funds	\$ 2,372,896	\$ 2,782,063	\$ 3,138,391	\$ 3,117,984	\$ 3,116,360	\$ 2,994,046	\$ 4,103,103	\$ 4,073,158
Gifts and Fundraising	\$ 67,339	\$ 112,133	\$ 45,799	\$ 58,177	\$ 138,386	\$ 201,056	\$ 337,135	\$ 456,421
County Funds	\$ 584,266	\$ 509,417	\$ 412,044	\$ 426,384	\$ 463,800	\$ 469,000	\$ 557,000	\$ 526,138
Income from Operations	\$ 97,274	\$ 101,370	\$ 136,863	\$ 121,605	\$ 133,027	\$ 92,013	\$ 196,620	\$ 495,023



## University of Maine Cooperative Extension Support for Washington County

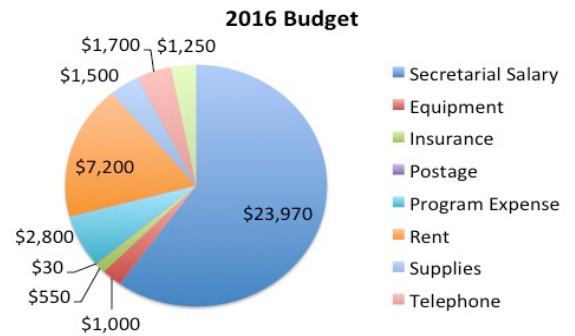
Washington	CY2015
Local Salaries and Benefits	\$362,791
Prorated Support from UMaine*	\$457,772
Computer Equipment and Networking	\$3,317
Statewide Animal Diagnostic Lab	\$3,039
Marketing, Publications, Video	\$816
Local Programming	
Supplies & Expenses	\$8,264
Postage	\$1,411
Telephone	\$601
Travel	\$6,315
<b>Total</b>	<b>\$844,326</b>

Without statewide support, UMaine Extension would not be present in this 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.

## Washington County Budget

Equipment	\$1,000
Insurance	\$550
Postage	\$30
Program Expense	\$2,800
Rent	\$7,200
Secretarial Salary	\$23,970
Supplies	\$1,500
Telephone	\$1,700
Utilities	\$1,250
<b>Total</b>	<b>\$40,000</b>

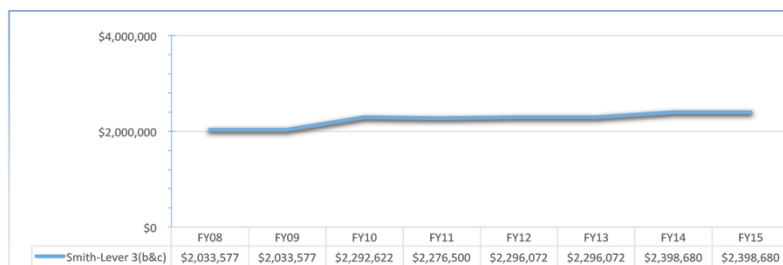
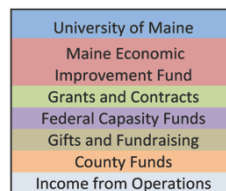
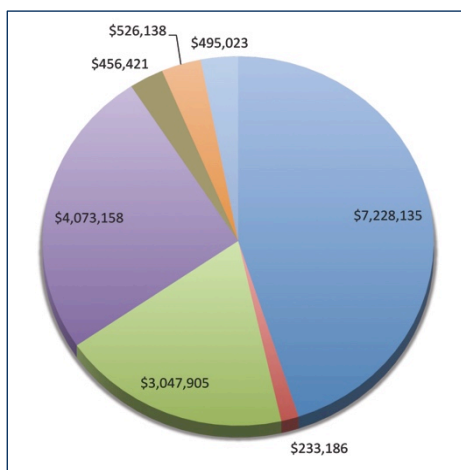
This pie graph illustrates the financial resources for programs offered, supported and managed out of the Washington County office.



Each year, Washington County tax dollars support the umaine extension with physical office space, support staff salaries, office supplies, equipment and some programming expenses.

## 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.



\*Smith-Lever 3(b&c) is our most important source of Federal funding and is a sub-set of "Federal Capacity Funds" in accompanying graphs

## Statewide Highlights

### Protecting Maine's Poultry and Egg Industry

Maine's poultry and egg industries are worth over \$75 million yearly. Because the University of Maine Animal Health Lab (UMAHL) provides the FDA-required salmonella testing for medium- to large-sized egg producers in Maine, New Hampshire, and Vermont, these farms can operate within FDA's Egg Rule. This work aids in prevention of human salmonellosis (SE) that might be acquired through eggs. The estimated cost to the egg industry of an SE outbreak could be higher than 10% of production. The impact of salmonella prevention is estimated to be more than \$7 million per year. UMAHL handled over 6,000 avian samples during reporting year 2015. During 2015, highly pathogenic avian influenza (HPAI) caused the death of more than 49 million poultry in the United States. If this disease comes to our region, substantial losses to the commercial egg industry would result. UMAHL is working with small and large producers to increase biosecurity and preparedness for emergencies such as HPAI.

### Protecting Maine's Dairies

Many of Maine's more than 8,000 small farms have dairy animals. Increasingly, organic and small ruminant dairies are producing a diverse collection of artisanal cheeses and alternative milk products. For public safety and quality control, dairies must keep pathogenic bacteria out of their dairy animals and dairy products. Culturing milk samples is key to protecting all of Maine's dairies. In 2014-2015, the UMaine Animal Health Lab cultured approximately 2,000 milk samples for mastitis; 4.5 percent were positive for *Staphylococcus aureus*, which can cause serious human illness. Because *S. aureus* cannot usually be cleared from the udder, culling chronically infected cows is advised to protect the public and avoid the spread of this disease on dairies. Maine's dairy owners and dairy product consumers benefit from our local, responsive mastitis diagnostic service. We screen samples from both large and small dairies for mycoplasma, *S. aureus*, and other pathogens. Allowing farmers to administer antibiotics appropriately, and to avoid excessive antibiotic use by culling animals with incurable infections, saves money and protects public health.

### IPM Strategies for Sweet Corn

Sweet corn comprises nearly half of the commercial vegetable acreage in Maine but may bring only marginal profits due partly to high pest management costs. Sweet corn is an ideal candidate for integrated pest management (IPM) strategies. UMaine Extension set up insect traps and trained student field scouts to monitor sweet corn pest populations. Information gathered was summarized and shared with growers, ag consultants, and extension educators around Maine through a weekly newsletter and blog. Corn IPM techniques were demonstrated at two grower field days. Growers adopting these techniques noticed significant reductions in pest management costs and reduced risk of pesticide exposure to themselves and the environment. Of the participants responding to a post-season survey, 61% used the information to reduce the number of pesticide sprays they applied, 69% found the program significantly reduced pest management costs, and more than 75% found that IPM techniques improved their crop yield and quality. Applying sample results to numbers from recent state agricultural statistics suggests that Maine growers conservatively reduced insecticide applications by over 100,000 gallons this season and saved over \$100 per acre on insecticide costs.

### Expanding and Diversifying Maine's Local Wheat Economy

UMaine Extension secured over \$1 million of funding in 2015 for a diverse program that generates region-specific, research-based information and provides educational and networking opportunities for participants in the grain economy. Key collaborators include MOFGA, the Maine Grain Alliance, the University of Vermont, and the US Organic Grain Collaboration. Maine and New England farmers have access to ground-truthed information on local grain production, markets, quality standards, and economics. Research trials started in 2013 on field peas as a rotation crop for cereal grains inspired and informed at least 5 farmers to grow about 800 acres of field peas in 2015 for local markets. Three winter grain farmers adjusted seeding and fertility methods based on on-farm research results, affecting another 800 acres. Aroostook



County farmers grew approximately 1,000 acres of organic grains. Two farmers planted a specialty heirloom rye for a new Nordic restaurant in New York City as a result of our connections and 3 years of trialing. With our guidance, a cooperating farmer produced Maine's first crop of blue tag certified organic grain seed, and one of the region's first certified seed of an heirloom variety. Farmers are successfully supplying new and expanding grain markets with high quality grain.

### **Food Safety Education for Families and Commercial Food Producers**

Each year 48 million people in the U.S. contract foodborne illnesses. Food safety risks exist in home food preparation and preservation, in people serving crowds, and in retail and commercial manufacturing and sales. These groups prepare or process food for others, often without proper food safety training, leading to increased occurrences of foodborne illness. UMaine Extension provides food safety training programs including food preservation; home food safety; Cooking for Crowds; industrial food sanitation; Good Agricultural Practices; Hazard Analysis Critical Control Points (HACCP) certification; and soon, Food Safety Modernization Act trainings. Extension provides private food safety consulting and process authority food product reviews to companies statewide. These programs directly reached and trained over 10,000 people in Maine in the past year and we estimate that over 500,000 consumers of food produced by New England-based food businesses have a reduced potential to contract foodborne illness because of our trainings.

In addition, the food process authority lab reviewed over 500 products, leading to added income and jobs across Maine and New Hampshire. In almost all cases one-on-one food safety consulting led to increased revenue, retention of jobs, and/or increased hiring. One new startup company hired 171 employees and said, *"Extension's work with our company has contributed to the safe production of 7.2 million pounds of lobster per year with a value of over \$36 million."* These results are decreasing the occurrences of foodborne illness and increasing overall health in Maine and wherever Maine foods are sold and consumed.

### **The "Whole Schools Whole Communities" Initiative**

The Environmental Living and Learning for Maine Students (ELLMS) Project secured a \$275,000 grant to implement the *Whole Schools Whole Communities Initiative*. The project partners—UMaine's 4-H centers, Chewonki, the Schoodic Institute, and the Ecology School—joined with 10 Maine school districts. The ten Maine public school districts, representing nearly 8,000 students, are deeply engaged in the process of envisioning and which implementing significant



### **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 of 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.<sup>1</sup>

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

change in teaching and learning. The process includes facilitated planning sessions during school leaders, teachers, community stakeholders, and ELLMS Project representatives are collectively shaping the future of education to include meaningful connection to community through service learning opportunities, leadership development, place-based curricula, outdoor field science, and STEM. The ELLMS partners are also conducting an integrated research project using "Most Significant Change" methodology. The research is designed to ascertain the longitudinal impact of quality environmental education opportunities for students and teachers.

## Maine Harvest for Hunger

Maine has the highest rate of food insecurity in New England, and ranks twelfth in the United States. Forty-three percent of food-insecure people do not qualify for food stamps or other government program. It is challenging for food-insecure people to afford fresh, nutritious food, and donations of fresh produce to Maine's emergency food system have declined recently. Since 2000, UMaine Cooperative Extension's statewide Maine Harvest for Hunger (MHH) program has mobilized gardeners, farmers, businesses, schools, and civic groups to grow, glean, and donate high quality produce to distribution sites and directly to neighbors in need. The objective is to mitigate hunger, improve nutrition and health, and help recipients develop lifelong positive nutritional habits. Through a dialogue between recipients, donors, and staff, the team has made significant progress in expanding the variety of offerings readily accepted and used by recipients, minimizing donation waste and extending the donation

season. In 2015, record-breaking donations of over 318,000 pounds (value of \$537,000, based on an average \$1.69 per pound) went to 188 distribution sites and to individuals. Nearly 500 volunteers in 14 counties collectively logged more than 5,000 hours.

## Eat Well: Responding to Food Insecurity

Maine Cooperative Extension's EFNEP paraprofessionals educate Maine's limited-income families and youth to help them make better lifestyle choices and improve their nutritional well-being. EFNEP participants learn how to eat well on a budget and apply what they learn to their daily lives. These positive changes will eventually help reduce the incidence of obesity and chronic disease of limited income families in Maine. As a result of completing the Eat Well program (320 adult participants surveyed): 74% showed improvement in one or more food resource management practice, 81% showed improvement in one or more nutrition practice, and 68% showed improvement in one or more food safety practice. Eat Well graduates reported increasing fruit and vegetable intake by one-half cup per day and self-reported increases in fiber, calcium, and vitamin D intake. 15% of Eat Well graduates also reported increasing physical activity to at least 30 minutes per day.

## EatWell...Supporting Children's Learning and Health

In Maine, more than a quarter of school-aged youth are overweight or obese, and nearly a quarter of the state's children are food insecure. UMaine Extension's Eat Well Program (funded by federal EFNEP dollars) provides limited-income youth in grades K-12 free education on healthy habits. Eighty percent of participants improved their ability to choose foods according to USDA MyPlate recommendations; 45 percent used safe food handling practices more often; and 32 percent improved their physical activity. Developing a solid foundation of healthy habits in childhood will help improve the health of Maine's population long term.



UMaine Extension's Eat Well Program brings nutrition education to limited-income families and youth in Maine.

## Parent Education: Laying the Foundation for Future Success and Well-Being

Research demonstrates that the experiences a child has during the first three years of its life affect the developing brain and lay the foundation for future well-being. Adverse experiences can have lasting negative outcomes and affect physical and emotional health, school achievement, relationships, self-sufficiency, and overall functioning and success. With federal, state, and local funding, Parenting Education Professionals (PEPs), part of the Maine Families Program, supported families in 3 counties. Seven certified PEPs made 1,984 home visits to 248 families. Using the Parents as Teachers model, PEPs met with families in their homes to share activity ideas to support

child development, build parenting skills, and provide links to community resources. Results from the annual parent survey showed that 99% of families used the child development information they received during home visits, 92% of families reported the program to be helpful, and 97% reported increased confidence as parents. In addition, breastfeeding rates for participating children were above the statewide average, 98% of children enrolled prenatally were up to date with well child visits, 94% of eligible children completed developmental screening, and all enrolled families were assessed for basic needs and referred to services as appropriate.

#### 4-H Camps Connecting Youth to Positive Community Experiences and Mentorship

In 2015 UMaine 4-H summer camps served 1,732 youth from all sixteen counties in Maine, thirty states, and three countries. Through living and working together, campers and staff became part of an interconnected community committed to a sustainable future. In living and working alongside positive adult mentors and peers, youth become members of a community to which they make positive contributions. The opportunities to develop mastery of skills happens in the context of the residential camp and learning center setting where the “implicit curriculum” includes healthy nutrition and activities, inclusive and safe learning environments, and intentional leadership development. Youth and program alumni report that the 4-H Camp and Learning Center experience has helped them develop greater self-confidence, civic engagement, and personal and academic success.



#### Protecting Wildlife Health

Maine has joined a group of laboratories that can “link” regional agencies with local diagnostic assistance for wild animals, the Northeast Wildlife Disease Cooperative (NWDC). Collaboration with the Department of Inland Fish and Wildlife has yielded information about the health of Maine and New Hampshire moose. We have documented health status at capture of over 200 radio-collared moose over a 3-year period, performed surveillance of hunter-killed moose lung parasites, and provided diagnostic services for radio-collared moose

dying of natural causes. The University of Maine Animal Health Lab (UMAHL) has hosted wildlife biologist trainings, provided diagnostic information for wildlife cases, and assisted in investigations of lead toxicosis in waterfowl. Participation in the NWDC is bringing more expertise to the region and to the UMAHL. UMaine Students benefit from opportunities to work with wildlife disease researchers and biologists benefit from improved safety in the field due to the information conveyed at the workshops. Regionally acquired information provides better disease surveillance, which is useful to wildlife managers. A 2014 report to the Maine Office of Tourism and the Maine Department of Inland Fisheries and Wildlife found that moose and waterfowl hunting brought more than \$33 million to Maine annually, and supported more than 450 full- and part-time jobs. The work of the UMAHL helps ensure continued hunting opportunities in Maine.

#### Protecting Maine Citizens Against Lyme Disease

There were approximately 1,400 reported cases of Lyme disease in Maine last year (estimated to be a fraction of the actual number of cases). Providing outreach and services related to this increasingly common public health threat is an important issue in Maine. In 2014 UMaine Extension created and implemented an in-state tick identification program. This program has been expanded by creating and consistently updating an informational website, providing public presentations on ticks and vector-borne disease, and developing informational tick cards for distribution. Program activities also aided in the passage of an \$8 million bond for construction of a new biosecure laboratory that will be able to test ticks for pathogens. Clients now have access to a wide range of tick information targeted specifically at issues relating to Maine. Tick specimens can be identified more quickly within the state, and upon completion of the new lab, ticks will be tested for pathogens, a service that is not currently offered in Maine.



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