2017 Academic Affairs Annual Report

EXECUTIVE SUMMARY

Major Accomplishments

Plant, Animal, & Insect Diagnostic Lab: In November we began construction on the new facility that is on schedule to be operational and occupied by the end of this year.

Assistant Extension Professor and Food Science Specialist: We completed a successful national search resulting in our welcoming Dr. Robson Machado to Extension. Dr. Machado has statewide responsibilities in helping Maine farmers and food entrepreneurs develop safe foods, while assisting processors to address changing regulations when commercializing local food and beverage products.

Maine 4-H Programs served more than 28,500 youth as their first exposure to UMaine, through 4-H camps and learning centers, 4-H community clubs, school, afterschool, and special interest programs. We reached more underserved and underrepresented youth than ever before.

4-H Camp and Learning Centers: Blueberry Cove, Bryant Pond, and Tanglewood 4-H Camps served over 9,000 youth with programs grounded in STEM, environmental education, and civic engagement. The school component of our programs use the outdoors and experiential education to teach students traditional classroom subjects. Participants report the 4-H Camp and Learning Center experience has helped them develop greater self-confidence, as well as personal and academic success.

The 10th Annual 4-H@UMaine Weekend was held May 20-21 on the UMaine campus. Each year the program has grown and this year's program engaged 145 youth and 30 adult volunteers and staff from all 16 Maine counties. Busloads of youth from farms, rural Maine, small towns, urban areas, and from New American communities and tribes participated. For most this was their first time on the UMaine campus. Youth participated in more than 20 interactive workshops taught by faculty, staff, and graduate students representing the College of Education and Human Development, College of Engineering, College of Liberal Arts and Sciences, College of Natural Sciences, Forestry and Agriculture, Fogler Library, and the New Balance Student Recreation Center. We also partnered with UMaine admissions councilors to enable more than 20 youth to apply to UMaine during the weekend.

Online Presence: In 2016, UMaine Extension's website at extension.umaine.edu – a composite of 60+ interconnected websites – received more than 2.3 million pageviews from users in 228 countries. UMaine Extension instructional videos have been viewed more than 4 million times.

Highlights

Extension Volunteers: Volunteers are the heart of UMaine Extension, giving their valuable time, effort, and expertise to greatly magnify the value of our work to the people of Maine. All of our volunteers commit time to appropriate training prior to their service. In 2016, over 4,000 Maine people volunteered more than 87,000 hours with us this year in a myriad of ways from 4-H clubs to fundraising, from growing food to managing County budgets. This remarkable effort equates to 41 full-time staff members.

I. SERVING MAINE

A. Community Engagement

***Public Value: Extension's Master Gardener Program*:** Extension faculty and staff trained 127 new MG Volunteers, bringing our statewide active MG Volunteer corps to 952. In total, they donated over 35,000 hours to a variety of educational efforts, and involved 1,579 youth in horticulture. Extension MG programs across Maine reported that over 600 volunteers contributed more than 5,000 volunteers hours during 2016 to grow and glean over 257,000 pounds of high-quality produce to mitigate hunger, improve nutrition and health, and help recipients develop lifelong positive nutritional habits. Value = $434,660 ($1.69 per pound).

The third ***Maine Hunger Dialogue (MHD)*** was held at the University of Maine at Augusta this year, attended by 339 students and staff from 21 Maine universities and colleges and 1 high school. Projects funded through MHD included developing food recovery networks, initiating food pantries and resource hubs, developing a new college course, writing and distributing a cookbook for easy nutritious meals on a limited budget, initiating an "edible park", starting community gardens, and conducting food drives and hunger awareness initiatives. "Meal food pack-outs" (packaging healthy nonperishable meals) held at 12 college campuses packed 163,000 meals that were distributed to food insecure students and community members.

Telstar Freshmen Academy: In 2014 the UMaine 4-H Center at Bryant Pond and SAD 44 created the Telstar Freshmen Academy, an experiential program designed to engage students, build communities of learning, resilience and high aspiration for the high school years. The program is based on a rigorous small-group learning model that includes integrated academics, service learning, 21st Century Skills, and community mentoring. In early 2017 the program received a six-year $600,000 grant from the Lerner Foundation allowing Extension to continue to strengthen this innovative program.

Diabetes Education with Native American Adults and Children: Twenty-eight percent of Native American adults in Washington County have been diagnosed with diabetes. UMaine Extension adapted its "Dining with Diabetes Down East" program to be culturally specific to the Passamaquoddy Tribe in Washington County. In the past two years 33 Native Americans participated in the program on Indian Township and Pleasant Point reservations. In 2016 Extension also collaborated with Passamaquoddy Pleasant Point Health Center to provide similar programming to 76 reservation children.

Parent Education: The first three years of a child's life are critical for growth and development. Research demonstrates that the experiences a child has during this time affect the developing brain and lay the foundation for future well-being. With federal, state, and local funding, certified Parenting Education Professionals (PEP) made 2,601 home visits to 289 families. Using the evidenced-based model, Parents as Teachers, PEPs met with families in their homes to share activity ideas to support child development and build parenting skills, as well as links to community resources.

Community Engagement Academy: Stakeholder engagement in community planning is a challenge for coastal Maine municipalities. Extension partnered with Maine Sea Grant and UNH Cooperative Extension to develop a two-state Community Academy to train citizens in community leadership and facilitation skills.

B. Economic Development

Blueberry Outreach and Research: Maine's wild blueberry industry, with 500 growers on 44,000 acres produces 100 million pounds of blueberries and has a direct and indirect economic impact of over $250 million to the state's economy. Cooperative Extension and Research efforts improved crop productively and efficiency by addressing pollinator population enhancement, weeds, pest insects, and diseases. Our research-based knowledge provided to growers has enabled growers in Maine to remain competitive in the world marketplace and maintain a significant contribution to the State's economy.

Potato Industry Support: The Maine potato industry encompasses over 500 businesses employing over 2,600 people and providing over $142 million in income to Maine farm families. The economic impact from our pest monitoring and educational programs for the 2016 season is estimated to be more than $12.8 million.

Connecting Grain Growers to High Value, Diversified Markets: With support from Extension, in 2016, Maine growers produced over 80 tons of Øland spring wheat (65 acres) and 5 tons of Svedje rye (5 acres) for an out-of-state buyer. The price growers are receiving for the specialty wheat is three to five times the typical price for spring wheat. In this initial year, this new market for Maine grown grain represented over $65,000 in increased revenue for Maine growers.

Supporting Local Poultry Product Sales and Creating Jobs for Immigrants: UMaine Extension helped facilitate the expansion of Commonwealth Poultry, helping them to become a USDA inspected facility. The facility is now slaughtering and processing 250,000 birds per year, sold locally and in Boston and other broader markets. Most of the company's 15 employees are immigrants of Somalia and other African countries, and Commonwealth Poultry has become a major employer for this underserved Maine population.

Helping Lobstermen Adapt to Warmer Gulf of Maine: Since 2014, UMaine Extension, Maine Sea Grant and other partners have explored how climate change is impacting the lobster fishery in order to identify potential resilience management strategies. The collaborators developed a computer model that allowed lobstermen to understand that reducing fishing effort during times of extreme warm waters and early molting lobsters is an effective and financially rewarding strategy. These decision-making tools and other resources for Maine lobstermen have helped help create flexibility in the industry, which has been crucial in adapting to the warming Gulf of Maine.

A Safe Food System Supporting Economic Success: UMaine Extension provides food safety training programs such as food preservation, Cooking for Crowds, Industrial Food Sanitation, Good Agricultural Practices, Hazard Analysis Critical Control Points certification, and Food Safety Modernization Act trainings. Faculty also engage in individual food safety consulting and process authority food product reviews for new and existing companies statewide. These programs directly reached and trained over 10,000 people in Maine in the past year. The food process authority lab reviewed over 500 products, leading to added income and jobs in both Maine and New Hampshire. In most cases one-on-one food safety consulting led to increased revenue, retention of jobs, and/or increased hiring.

University of Maine Animal Health Lab: The University of Maine Animal Health Lab (UMAHL) provides services to the veterinarians, livestock producers, and animal owners of the state. The lab performs a variety of diagnostic services, including necropsy, microbiology, virology, pathology, and special research support. It offers diagnostic support to clinicians, and assists in finding solutions for agricultural and aquacultural producers using UMaine Extension resources. . Construction on the new ***Plant, Animal, and Insect Lab*** is expected to be completed in November 2017. The lab will expand UMAHL's services, reach, and positive impact on Maine's over 8,000 farms. In 2016, UMAHL tested almost 10,000 samples, the great majority of which were from farm animals. It tested over 5,000 poultry samples and over 2,000 milk samples, thus allowing farms of all sizes to operate with more assurance of healthy animals and healthy products.

Maine Food Corps Reducing Obesity and Medical Costs: In the last 30 years, the percentage of overweight or obese children in this country has tripled and 30 percent American children are on track to develop diabetes in their lifetime. According to a 2012 UMaine study, the medical costs of obesity associated with the cohort of Maine children and adolescents - both those who are obese and non-obese – will be an estimated $1.2 billion over the next 20 years. Extension has acted as the state partner for FoodCorps (FC) in Maine since its inaugural year in 2011. FoodCorps connects kids to healthy food in school, so they can lead healthier lives and reach their full potential. In the past 5 years, FC service members have served in 55 schools

teaching 25,415 students about food and nutrition. They have built or revitalized 30 school gardens, engaged with 222 farmers, producers or distributors, and engaged 704 volunteers who contributed 8,733 hours of service.

C. Workforce Development

Pesticide Education Credits: Extension faculty and staff provide a variety of education options that earn education credits towards certification for growers in Maine who annually sell more than $1,000 of plants or plant products intended for human consumption and who use commercial or general-use pesticides on property owned or leased by them. The Board of Pesticides Control estimates that this enables more than 2,000 growers to safely interact with the full spectrum of agricultural treatments.

Farm Tractor Safety: We have presented effective Farm Tractor Safety courses for an average of 80 individuals per year for over 25 years. The courses includes classroom sessions, a shop session and tractor operation. In a recent survey over 33% became employed or maintained employment as a result of their participation.

D. One University Initiatives

UMS Food Services Contract: Since 2015 the Executive Director of Extension has served as a resource to the UMS team that is addressing the five-year food services contract for six of the seven campuses. Extension provides significant support to the group in understanding Maine's agricultural and food processing economy and the realities associated with achieving the BOT goal of 20% locally sourced food by 2020. Extension is on the governance committee that monitors the implementation of the contract and is working with the vendor (Sodexho) and UMaine Food Service on outreach effort to farmers and food processors on how to sell to the UMS. At this time over 17% of the food served is sourced locally.

Maine Food and Agriculture Center: In 2016 Extension completed staffing the Maine Food and Agriculture Center, with the hiring of Audrey Cross as MFAC Coordinator. Audrey joins Program Administrator Dr. Richard Brzozowski in overseeing the Center's activities. In 2015 the Board of Trustees expanded the mission of the Maine Agriculture Center, now called the Maine Food and Agriculture Center. With $3.9 billion in overall economic impact, agriculture is one of Maine's largest, fastest growing and most promising industries. The Maine Food and Agriculture Center is growing to encompass all sectors of the burgeoning food economy; establish first-contact access to the programs and expertise available at all seven of Maine's public universities; and explore opportunities for cross-campus and cross-discipline coordination and program development based on emerging needs in Maine's food economy.

New Food Studies Program at USM: As part of the Maine Food and Agriculture Center Initiative, Extension is collaborating with USM on aspects of their new food studies program based in Portland. One such aspect is a proposed faculty member having a joint-appointment in food security with an outreach component through Cooperative Extension starting in FY2019. The funding for this position was sought through a UMS Program Innovation proposal but was unsuccessful.

4-H STEM Ambassadors are students at one of the University of Maine System campuses who are trained in experiential learning, risk management, and science content, and are then paired with host sites to facilitate STEM activities with youth. 4-H youth development staff has been working with other campuses in the UMaine System to expand the STEM Ambassadors' program throughout the state. Currently, six campuses are partnered to bring hands-on STEM education to young people in their community. In 2016, UMaine Extension trained and mentored 121 students who provided hands-on STEM learning for more than 1,200 youth; attended six UMS campuses; and volunteered in 32 Maine communities.

Spousal/Partner Accommodation: In 2016 Extension expanded the partnership with UMPI by hiring ***Sukhwinder Bali*** into a joint appointment as Assistant Extension Professor & Assistant Professor of Sustainable Agriculture. Ms. Bali is the spouse of Dr. Lakesh Sharma who was hired in 2015 as the first joint appointed faculty across two campuses of the UMS.

Support for the Maine Brewing Industry: As a part of the effort to build collaboration across campuses, Extension sought to build a connection between faculty working with the brewing industry at UMaine and USM. This effort initially failed as USM launched its Beer Quality Assurance and Research Laboratory with no communication with the Extension faculty member (Dr. Jason Bolton) who is working with the very businesses that will work with the USM lab. That being said, Extension did participate in the Maine Beer Summit held at USM and there is a commitment on the part of USM leadership to foster a more collaborative relationship in the future. This is a work in progress since, unfortunately, efforts to collaborate continue to yield no positive result.

"One University" Student Workers: We regularly reach out and hire undergraduate students from other UMaine campuses in support of our programs. This year, for example, Extension hired University of Southern Maine and UMaine Machias students to support 4-H Science initiatives and to support statewide nutrition and food safety programs. We have received positive comments from the students who appreciate the opportunity to actively participate in real life activities while building their portfolio of experience.

Multi-campus Program Integration: Over the past year we have held 4-H programs at UMaine Machias and USM. These programs were integrated with local staff and students, giving youth realistic college campus experience. Programs included a Robotics Expo and Mini-Forum [https://extension.umaine.edu/cumberland/programs/cumberland-county-4-h/4-h-mini-forum/], both of which were a success and will occur again next year.

II. FINANCIAL SUSTAINABILITY

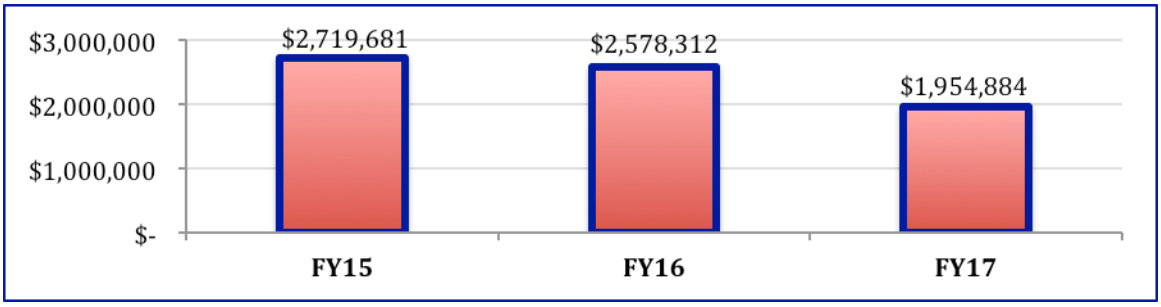
A. Student Credit Hour Production – N/A

B. Enrollment Collaborations with Enrollment Management

During this year's ***4-H@UMaine Weekend*** we partnered with UMaine admissions councilors to enable more than 20 youth to apply to UMaine during the weekend event (see **Major Accomplishments** above).

C. Research & Grant Funding to Support Research and Extension Outreach Programs

Grant Funding; 3-Year Trend



New Research Awards

Research Project	Funder	PI	Award	Indirect
Cost Of Milk Production Study	USDA	Anderson, Gary W.	29,438	3,387
Demonstrating Effects Of Fly Ash On Ag Production And Soil Amendments	USDA	Bali, Sukhwinder	64,292	13,267
Implementing CAHP For Salmon Aqua	USDA	Bouchard, Deborah	40,000	3,636
Maine Potato Integrated Pest Management	USDA	Dill, Griffin	97,792	0
Safeguarding The U.S. Seed Potato Industry	USDA	Dwyer, James D.	42,979	6,447
Building A Hops Industry In Maine	USDA	Handley, David T.	10,558	0
Multi-Regional Risk Analysis Of Farm Manure Use	USDA	Hutchinson, Mark	44,001	9,679
Investigating Methods Of Preventing Soil Loss In A Potato	USDA	Jemison, John M.	9,866	987
Perceived Risks On The Family Farm	USDA	Kantor, Debra	2,000	413
		Total	$340,926	$37,816

New Outreach Awards

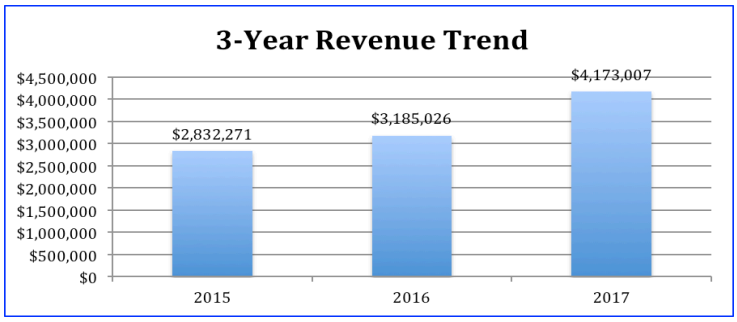
Outreach Project	Funder	PI	Award	Indirect
Navy Teen Summer Camp Scholarship Prog.	US DOE	Decke, Jessica	24,741	202
Military Teen Adventure Camps	USDA	Decke, Jessica	121,800	0
Navy Teen Summer Camp Scholarship Prog.	USDA	Decke, Jessica	26,806	570
Northeast Plant Diagnostic Network	USDA	Dill, James F.	21,100	1,918
Pesticide Educator Editor	ME DACF	Dill, James F.	65,000	0
Healthy Eating Tips	ADC	Fishman, Lisa	5,000	0
Child Safety On Farms	Farm Credit East	Forstadt, Leslie	1,000	0
Focusing On Interpersonal Relationships For Greater Farm Viability	USDA	Forstadt, Leslie	61,002	5,823
4-H Shooting Sports	US Dept of the Interior	Fournier, Ronald	24,100	0
4-H Shooting Sports	US Dept of the Interior	Fournier, Ronald	23,800	0
Crop Insurance Education For Maine	USDA - RMA	Handley, David T.	204,580	18,416
Maine Agricultural Leadership Conference	Farm Credit East	Hopkins, Kathryn	1,475	0
Eldertide	USDA	Jackson, Tori L.	2,500	516

Maine Healthy Beaches	US EPA	Kaczor, Keri	175,499	20,190
U.S. Cellular 4-H STEM	National 4-H Council	Mason, Mitchell	5,000	171
US Cellular STEM Engagement	U.S. Cellular	Mason, Mitchell	5,000	255
Maine Parenting Education	Maine Children's Trust	Neff, Wesley	383,840	44,158
Children, Youth, And Families At-Risk Sustainable Community Projects	USDA	Ouellette, Kristy	140,000	0
Maine Math And Science Alliance ACRES Project	Noyce Foundation	Ouellette, Kristy	24,556	5,067
Building A Coherent STEM Infrastructure In Rural Communities	US NSF	Phelps, Lisa	84,586	17,454
4-H National Mentoring Program	US DOJ	Scott, Ryder	124,052	9,037
Betterment Fund 2017 - Maine West	Betterment Fund	Scott, Ryder	5,000	0
Lerner Foundation Start-Up Grant	Lerner Fnd	Scott, Ryder	19,522	0
HughesNet STEM Program	National 4-H Council	Scott, Ryder	10,000	0
		Total	$1,613,959	$128,076

D. Revenue Centers

Extension Revenue - 2017

Sales & Services	210,755
Program Revenue	1,547,531
Camp Revenue	1,531,995
Merchandise Sales Revenue	7,375
Course Material Sales	107
Publication Revenue	21,463
Rental Income	10,965
Other Income Other Org	843,031
Total:	$4,173,007



E. Private Giving/Alumni Cultivation

Extension Gifts – 2017

Gifts - Governments	$825
Gifts - Other Non-Profits	$49,545
Gifts - UMS Foundations	$181,059
Gifts - Other Foundations	$158,695
Gifts - Corporate Business	$84,960
Gifts - Corporate Foundations	$300
Gifts - Individuals	$19,893
Gifts - Alumni	$215
Gifts- UM Foundation Pay Over	$8,331
Endowment Income Distribution	$281
Invest Income Distribution	$3,807
	$559,132

F. Initiatives to Increase Fiscal Efficiency

- Extension has fully integrated an online registration and payment system for events using a Centralized Database Management System. Significant progress has been made in changing the culture of the organization and customers attitudes regarding online registration and digital payments for Extension events.
- Extension administration is in the process of restructuring the matrix of responsibilities within our finance office to increase efficiencies and more fully meet the needs of the workforce as a result of reduced support through University shared services.
- Extension administration is more closely scrutinizing the financial management of County government funds that support Cooperative Extension, and creating spending guidelines that more closely reflect those of UMaine and the UMS.

III. CULTURE OF EXCELLENCE

A. Faculty Mentoring and Professional Development

All Cooperative Extension faculty participate in mentoring and diverse professional development, including the creation of a written professional development plan.

B. Faculty Achievements

Coffin, D National Finalist 2017 NACAA Communications Awards - Computer Generated Graphics Presentation with Script for "Using Pechakucha Format for County Executive Committee Presentation."

Fitzgerald, C. 2016 Distinguished Service Award, National Association of County Agriculture Agents.

Hopkins, K. Became National Chair for Public Relations Committee with National Association of County Agriculture Agents.

Jennings, S., 2016 Northeast Region and the 2016 Denise Miller National Innovators Award through the National Association of Extension 4-H Agents.

Kersbergen, **R.** Appointed to Maine Technology Institute Forestry and Agriculture Technical Committee. Brunswick, ME.

Mallory, E. Appointed to the University of Maine Board of Agriculture as the Faculty Representative for Extension and College of Natural Sciences Forestry & Agriculture.

McConnon, J.C., Jr. Serving on the state of Maine's "Farms for Maine's Future" Review Panel. Appointed to a 3-year term by the Commissioner of Maine's Department of Agriculture, Conservation, and Forestry.

McConnon, J.C., Jr. Appointed to 3-year term on the Technical Advisory Committee for the NE Regional Center for Rural Development. Co- Chair of the Technical Advisory Committee.

Ouellette, K. 2016 Distinguished Service Award, National Association of 4-H Extension Agents.

Peronto, M. Appointed Northeast Regional Committee Vice-Chair - Communications Committee, National Association of County Agriculture Agents.

Phelps, L., Appointed to the Program Leaders Working group for National 4-H as a Northeast rep.

Savoie, K., McCarty, K. 2017 Master Family and Consumer Science Volunteer Award, National Extension Association of Family and Consumer Sciences.

Sharma, L., Appointed vice leader for the Precision Agriculture Community of the American Society of Agronomy.

Stancioff, E. Selected by NOAA to develop a case study and professional quality video "Maine's Lobster Fishing Community Confronts Their Changing Climate: Participatory planning and system dynamics modeling help fishermen in coastal Maine make decisions to improve their bottom lines".

Stancioff, E. Selected as a NOAA Summer Spotlight feature of *Signs of the Seasons* on CitizenScience.Gov: https://www.citizenscience.gov/federal-citsci-blog/

Yarborough, D. Order of the Wild Blueberry, Wild Blueberry Association of North America, October 2016.

Yarborough, D. Outstanding Service and Long Term Commitment Award, Wild Blueberry Producers of Nova Scotia, November 2016.

C. 1. Research and Scholarship Summary

Martyniak, B., **Bolton, J.**, Kuksin, D., Shahin, S., and Leo Li-Ying Chan. "A Novel Concentration and Viability Detection Method for Brettanomyces Using the Cellometer Image Cytometry." *Journal of Industrial Microbiology & Biotechnology* 44.1 (2016): 119-28. Web.

Coffin, D., Causey, R., Staniar, B., Williams, C., McKeever, K., Gradil, C., Nadeau, J, Sanchez, **A., Lichtenwalner**, A., Biddle, A., Cole, K. "Equine Owners Research and Education Needs to Improve Gastrointestinal Health in Their Equids." submitted to the *NACAA Journal* (March 2017)

Strout, K.A., **Jemison, J.M.** Jr., Obrien, L. and Whiry, D. "GROW: Green Organic Vegetable Gardens to Promote Older Adult Wellness." *Journal of Community Health* (2017) (Accepted for publication.)

Johnson, S. B. "Management of Soilborne Diseases." Proceedings of the 9th Australasian Soilborne Diseases Symposium, (2016) p 26.

Hansen, Z.R., Everts, K., Fry, W., Gevens, A., Greenwald, N., Gugino, B., Johnson, D.A., **Johnson**, S.B. Judelson, H., Knaus, B., McGrath, M., Myers, K., Ristaino, J., Roberts, P., Secor, G., and Smart, C. "Genetic Variation within Clonal Lineages of Phytophthora Infestans Revealed through Genotyping-By-Sequencing, and Implications for Late Blight Epidemiology." *Plos One* 11.11 (2016): Web.

Johnson, S. B. "Dickeya, a new potato pathogen in Maine and elsewhere." *Phytopathology* (2016) 106: 5. Zhang, X., Jiang, H., **Johnson S. B.,** Hao, J. and Marangoni, N. F. "Effects of chemical and biological products on pink rot of potato." *Phytopathology* (2016) 106: 5.

Hafla, A.N., Soder, K.J., Brito, A., **Kersbergen**, R., Benson, F., Darby, H., Rubano, M., and Reis, S.F. "Case Study: Feeding Strategy and Pasture Quality Relative to Nutrient Requirements of Dairy Cows in the Northeastern United States." *The Professional Animal Scientist* 32.4 (2016): 523-30. Web.

Abreu, Daniel C., Hoshide, A., **Mallory, E**., **Roche**, **E.H.**, Soares de Oliveira, A., **Kersbergen**, **R.**, Lana, R.P., Fonseca, M. "Economic and environmental implications of wheat crop sequences on organic dairy farm simulations." *Crop & Pasture Science* (2016) Volume 67, Number 11, p. 1127 – 1138. Available: http://www.publish.csiro.au/cp/#CurrentIssue

Roche, Erin H., **Mallory**, E.B., Molloy, T., and **Kersbergen, R**. "Evaluating Organic Bread Wheat as a Rotation Crop for Organic Dairy Farms." *Renewable Agriculture and Food Systems* (2017): 1-16. Web.

Hafla, A.N, Soder, K.J., Brito, A., **Kersbergen, R.**, Benson, F., Darby, H., Rubano, M., and Reis, S.F.. "Case Study: Feeding Strategy and Pasture Quality Relative to Nutrient Requirements of Dairy Cows in the Northeastern United States." *The Professional Animal Scientist* 32.4 (2016): 523-30. Web.

Soder, K.J., Hafla, A.N., Brito, A.F., **Kersbergen**, **R.**, Benson, A.F., Darby, H., and Rubano, M.D. "Feeding strategy and pasture quality relative to nutrient requirements of grazing dairy cows in the northeastern U.S." Proceedings of 2016 American Forage and Grassland Council annual meeting, Jan. 10-13, 2016. Baton Rouge, LA.

Soder, K.J., Hafla, A.N., Brito, A.F., **Kersbergen**, R., Benson, A., Darby, H., and Rubano, M.D. "Feeding strategy and pasture quality relative to nutrient requirements of grazing dairy cows in the northeastern U.S." Proceedings of the 5th Grazing Lands Nutrition Conference, Jul 16-19, 2016. Park City, UT.

Hafla, A.N., Soder, K.J., Brito, A.F., **Kersbergen**, **R.** Benson, F., Darby, H., Rubano, M.D., Dillard, S.L., Kraft, J., and Reis, S.F. "Winter supplementation of ground whole flaxseed impacts milk fatty acid composition on organic dairy farms in the northeastern United States." Proceedings of 2017 ADSA meeting, June 25-28, 2017. Pittsburgh, PA.

Santana, R.A.V., Brito, A.F., Cabrera, V.E., Barbosa, F.A., Hoshide, A.K., Benson, A.F., Hafla, A.N., Darby, H.M., Soder, K.J., and **Kersbergen, R**. "Economic and environmental performance of traditional and grass-fed organic dairies using the Integrated Farm System Model." Proceedings of 2017 ADSA meeting, June 25-28, 2017. Pittsburgh, PA.

Hafla, A.N., Soder, K.J., Brito, A.F., **Kersbergen**, **R.** Benson, F., Darby, H., Rubano, M.D., Dillard, S.L., Kraft, J., and Reis, S.F. "Winter supplementation of ground whole flaxseed impacts milk fatty acid composition on organic dairy farms in the northeastern United States." Proceedings of the 2017 ASAS meeting, July 5-8, 2017. Baltimore, MD.

Roche[1] E., **Mallory**, **E.**, Molloy, T., and **Kersbergen, R**. "Evaluating organic bread wheat as a rotation crop for organic dairy farms. Renewable Agriculture and Farm Systems" (2017) pp. 1–16. doi: 10.1017/S1742170517000035. [1]Graduate student.

Roche, Erin H., **Mallory, E.B.**, and Darby, H. "Evaluating Split Nitrogen Applications and In-Season Tests for Organic Winter Bread Wheat." *Organic Farming* 3.1 (2017). Web.

Abreu[1], D. C., Hoshide, A.K., **Mallory**, **E.B.**, **Roche, E.H.,** Oliveira, A.S., **Kersbergen**, **R.**, Lana, R.P., Fonseca, M.A. 2016. "Economic and environmental implications of wheat-crop sequences on organic dairy-farm simulations." *Crop and Pasture Science* **67(11):**1127-1138.

Freedman, Emily A., **McConnon, J.A., Jr**.,. Hunt, G.L. and Gabe, T.M. 2017. "An Analysis of the Economic Impacts of Big-Box Stores on a Community's Retail Sector: Evidence from Maine." Journal of Regional Analysis and Policy, Volume 46, Number 2: 138-153. Available at: http://www.jrap-journal.org/.

Worker, S. **Ouellette, K.** & Maille, A. (In Press) "Redefining the Concept of Learning in Cooperative Extension." Journal of Extension. Article 16165FEA

Allen, S., & **Ouellette, K**. "Building Coaching Relationships Over the Internet. It's Easier than you Think." *Afterschool Today*, (2016) Fall 7(3), 12-13.

Mason, M. & **Ouellette, K**. "Factors Related to Motivating Adult Somalis with Refugee Status to Volunteer for 4-H." *Journal of Extension*, (2016) 54(5). Article 5FEA6. Available at: https://joe.org/joe/2016october/a6.php

Maille, A. **Ouellette, K,** & Worker, S. "The 4-H Learning Experience: A Framework for learning and teaching in 4-H." (2016) Available at: https://nifa.usda.gov/sites/default/files/asset/document/The%204-H%20Learning%20Experience.pdf

Yarborough, D., Drummond, F., Annis, S. and D'Appollonio, J. 2017. "Maine Wild blueberry systems analysis." *Acta Horticulturae*. *In Press*.

Chen, X., **Yarborough, D**, and D'Appollonio, J. 2017. "Wild blueberry systems approach economic and risk analysis." *Acta Horticulturae*. *In Press*.

Wu, V.C.H., Drummond, F.A., Tadepalli, S., Camire, M.E., Davis-Dentici, K., Bushway, A., and **Yarborough**, D.E. "Salmonella spp. dynamics in wild blueberry, Vaccinium angustifolium Aiton." *World Microbiol*. (2017) 4(1): 64-71.

C.2. Noteworthy Invited Presentations

Coffin, D. R. "Electronic Newsletters That Clients Actually Read" Small Farm Conference. 2016. Virginia Beach, VA,.

Coffin, D.; Causey, R.; Staniar, B.; Williams, C.; McKeever, K.; Gradil, C.; Nadeau, J; Sanchez, A.; Lichtenwalner**, A.**; Biddle, A.; Cole, K. "Equine Owners Research And Education Needs To Improve Gastro-Intestinal Health In Their Equines." National Association of County Agriculture Agents Annual Meeting and Professional Development Conference. 2016. Little Rock, AR.

Coffin, D. R. "Encourage Gardening One Tomato at a Time." National Association of County Agriculture Agents Annual Meeting and Professional Development Conference. 2016. Little Rock, AK.

Coffin, D. R. "Electronic Newsletters that Clients Actually Read." National Small Farm Conference. 2016. Virginia Beach, VA.

Fitzgerald, C. and **Kersbergen, R**. "Maine Corn Silage Hybrid Performance Trials, 2007 – 2015." 2016. National Association of County Agricultural Agents Annual Meeting. . http://www.nacaa.com/posters/poster_list.php?poster_id=1177 (accessed 10/25/16).

Jemison, J.M., Jr. "How to build soil organic matter in oil seed cropping systems." Canadian Small Grains and Oilseed Conference. March 2017. Charlottetown, PEI..

Jemison, J.M., Jr. "Benefits and consequences of tillage in forage production systems." Canadian Small Grains and Oilseed Conference. March 2017. Charlottetown, PEI..

Johnson, S. B. "Powdery Scab and Mop-Top Virus Update." Presented at the New Brunswick Seed Potato Day. March 6, 2017. Grand Falls, New Brunswick..

Johnson, S. B. "How to Keep Dickeya--the New Blackleg--out of Your Fields." Presented at the Ontario Potato Conference and Trade Show. February 28, 2017. Guelph, Ontario.

Johnson, S. B. "Healthy Seed: The Foundation of a High-Quality Potato Crop." Presented at the Ontario Potato Conference and Trade Show. February 28, 2017. Guelph, Ontario.

Johnson, S. B. "Farm Transition Issues." Presented to the Koo Wee Rup area potato growers. December 3, 2016. Nar Nar Goon, Australia.

Johnson, S. B. "Potato Production Constraints." Presented to the Mount Gambier area potato growers. December 2, 2016. Mount Gambier, Australia.

Johnson, S. B. "University Faculty Roles in the US." Presented to the Melbourne University Plant Pathology Graduate Students. December 1, 2016. Melbourne, Australia.

Johnson, S. B. "Potato Disease Issues." Presented at the Bungaree Bowling Club. November 30, 2016. Bungaree, Australia.

Johnson, S. B. "Potato Seed Issues." Presented to the Ballarat area potato growers. November 30, 2016. Ballarat, Australia.

Johnson, S. B. "Virus Consequences From the Use of Noncertified Potato Seed." Presented to the Thorpdale area potato growers. November 29, 2016. Thorpdale, Australia.

Johnson, S. B. "Potato Late Blight Control in Maine." Presented at the Thorpdale Bowling Club. November 28, 2016. Thorpdale, Australia.

Johnson, S. B. "Nozzle Selection." Presented to the Thorpdale area potato growers. November 28, 2016. Thorpdale, Australia.

Johnson, S. B. "Potato Handling and Management." Presented to the Koo Wee Rupp area potato growers. November 27, 2016. Nara Nar Goon, Australia.

Johnson, S. B. "Potato Storage Issues." Presented to the Pukekawa potato growers at the FAR field day. November 25, 2016. Pukekawa, New Zealand.

Johnson, S. B. "Potato Fertility Issues." Presented to the Manawatu potato growers at the FAR field day. November 24, 2016. Opiki, New Zealand.

Johnson, S. B. "Soil Borne Disease Issues." Presented to the North Canterbury potato growers at the FAR field day. November 23, 2016. Ashburton, New Zealand.

Johnson, S. B. "Soil Borne Disease Control in Potatoes." Presented to the South Canterbury potato growers at the FAR field day. November 23, 2016. Temuka, New Zealand.

Johnson, S. B. "Disease Control in Small Grains." Presented to the Templeton area grain growers at the FAR field day. November 22, 2016. Templeton, New Zealand.

Johnson, S. B. "Soilborne Disease Control and Potato Emergence Issues." Presented to Lovett Farms at the FAR field meeting. November 22, 2016. Pendarves, New Zealand.

Johnson, S. B. "The Maine Approach to Potato Late Blight Control." Presented to the Lincoln University Faculty. November 21, 2016. Lincoln, New Zealand.

Johnson, S. B. "Management of Soilborne Diseases." Presented at the 9th Australasian Soilborne Diseases Symposium. November 15, 2016. Lincoln, New Zealand.

Johnson, S. B. "Seed Handling and Cutting." Presented at the NDSU/UM Scout School. February 23, 2017. Grand Forks, ND.

Johnson, S. B. "Update on *Dickeya*." Presented at the International Crop Expo Meeting. February 23, 2017. Grand Forks, ND.

Johnson, S. B. "Update on the *Dickeya* Situation." Presented at the 2017 Southern and East Coast CU Potato Summit. February 7, 2017. Orland, FL.

Johnson, S. B. "Fertility Management for Potatoes." Presented at the Mid-Atlantic Fruit and Vegetable Conference. February 2, 2017. Hershey, PA.

Johnson, S. B. "Update on *Dickeya* Situation." Presented at the Mid-Atlantic Fruit and Vegetable Conference. February 2, 2017. Hershey, PA.

Johnson, S. B. "*Dickeya* Update." Presented at the Eastern Shore Agricultural Conference. January 25, 2017. Melfa, VA.

Johnson, S. B. "*Dickeya*—Myths and Realities." Presented at the Cornell Cooperative Extension Office of Suffolk County. June 13, 2016. Riverhead, NY.

Johnson, S. B. "*Dickeya* White Potato Meeting." Presented at the New Jersey Potato Grower's Meeting. January, 2016. Woodstown, NJ.

Johnson, S. B. "Dealing with the current *Dickeya Situation from a* Pennsylvania Potato Grower Perspective." Presented at Pennsylvania

Potato Grower's Meeting. January 8, 2016. Harrisburg, PA.

Johnson, S. B. "*Dickeya*, a new potato pathogen in Maine and elsewhere." Presented at the Rhode Island Potato Grower's Meeting. January 11, 2016. Warwick, RI.

Hao, J., Jiang, H., **Johnson, S. B.** "Detection and characterization of *Dickeya* species in the outbreak of blackleg disease of potato in Maine." Presented at the Northeastern Plant, Pest, and Soils Conference Meeting. January 5, 2016. Philadelphia, PA.

Johnson, S. B. "*Dickeya*, a new potato pathogen in Maine and elsewhere." Presented at the Northeastern Plant, Pest, and Soils Conference Meeting. January 6, 2016. Philadelphia, PA.

Zhang, X., Jiang, H., **Johnson**, **S.B.**, Hao, J., Marangoni, N.F. "Effects of chemical and biological products on pink rot of potato." Presented at the Northeastern Plant, Pest, and Soils Conference Meeting. January 6, 2016. Philadelphia, PA.

Johnson, S. B. "The *Dickeya* Situation in Maine." Presented at the National Potato Council Seed Potato Certification Sub-Committee Meeting. December 2, 2015. Washington, DC.

Johnson, S. B. "Powdery Scab and Mop-Top Virus Update." Presented at the Thirty-second Annual Maine Potato Conference. January 19, 2017. Caribou, ME.

Johnson, S. B. "*Dickeya* Update". Presented at the Thirty-second Annual Maine Potato Conference. January 18, 2017. Caribou, ME.

Johnson, S. B. "*Dickeya*—An Update." Presented at the UMaine Pest Management Conference. December 7, 2016. Presque Isle, ME.

Johnson, S. B. "Update on *Dickeya* Research." Presented at the Maine Potato Board Seed Council Committee Meeting. October 24, 2016. Presque Isle, ME.

Johnson, S. B. "Late Blight and *Dickeya* Update for 2016." Presented at the Northern Maine Field Representatives Meeting. July 20, 2016. Presque Isle, ME.

Johnson, S. B. "*Dickeya;* A Year in Review." Maine Potato Board Seed Growers Executive Council Meeting. June 21, 2016. Presque Isle, ME.

Johnson, S. B. "*Dickeya*—Myths and Realities." Presented at the University of Maine at Presque Isle. March 21, 2016. Presque Isle, ME.

Johnson, S. B. "Potato Update for 2015." Presented at the Northern Maine Field Representatives Meeting. May 18, 2015. Presque Isle, ME.

Johnson, S. B. "The *Dickeya* situation in Maine." Presented at the Thirty-first Annual Maine Potato Conference. January 20, 2016. Caribou, ME.

Johnson, S. B. "Dealing with the *Dickeya* situation in Maine." Presented at the Thirty-first Annual Maine Potato Conference. January 20, 2016. Caribou, ME.

Kersbergen, R. Keynote Speaker. "Nutritional Strategies to Optimize Herd Health and Performance." Vermont Organic Dairy Producers Conference. March 9, 2017. Randolph, VT.

Kersbergen, R. "Cover Crop/ Forage Management in Potato/Livestock Crop Rotations." and "Improving Pasture Management in a Changing Climate." PEI Soil and Crop Improvement Association Annual Conference. March 1-2, 2017. Charlottetown, Prince Edward Island, VT.

Mallory, E. "Nitrogen fertility for organic small grains." Atlantic Canadian Organic Regional Network Conference and Trade Show. November 28-30, 2016. Moncton, New Brunswick, Canada.

Mallory, E. and Darby, H.. "Growing the grain network". Atlantic Canadian Organic Regional Network Conference and Trade Show. November 28-30, 2016. Moncton, New Brunswick, Canada.

Mallory, E. "Managing nitrogen for small grains." New England Agricultural Service Providers In-Service Training. February 1-2, 2017. Portsmouth, NH.

Mallory, E. "Soil health as a risk management strategy." Maine Soil and Agronomy Conference. February 22, 2017. Presque Isle, Maine.

Mallory, E. "Managing grain for different markets." Maine Potato Conference. January 18-19, 2017. Caribou, ME.

Mallory, E. and Molloy, T. "Varieties matter! Selecting barley varieties for new craft malting markets." Maine Malt Workshop and Field Day. July 7, 2016. Stillwater, ME.

McConnon, J.C, Jr., **Bassano, L.V.** *"Facilitating Business-to-Business Focus Groups to Enhance Community-Based Entrepreneurship."* National Association for Community Development Extension Professionals and Association of Natural Resource Extension Professionals Joint Conference. June 27, 2016. Burlington, Vermont

Ouellette, K., **Mason, M.**. "Programming Where the Kids Are. Recruitment Strategies for Underserved Youth." National Association of 4-H Extension Agents Conference. New Orleans, LA.

Lobley, J., Ouellette, K. "Totally Virtual! Transforming Online Learning." National Extension Volunteer Conference. Asheville, NC.

Ouellette, K., **Mason, M.**, and Personette, L. "Sustainability strategies for CYFAR projects." 2017 CYFAR grantees conference. Washington, DC.

Stancioff, E., Tuler, S. "Promoting Climate Awareness and Adaptive Planning in Three Atlantic Fisheries Communities Using the VCAPS Process and System Dynamics Model." Invited and hosted by NOAA Fisheries Service Office of Science and Technology and the NOAA National Sea Grant Program. May 3-5, 2016. Silver Spring, MD.

Stancioff, E. "University of Maine Extension/Maine Sea Grant/NECAN, Strategies for Advancing Science and Engagement of Coastal Acidification in the Northeast Coastal Acidification Network Regions." NOAA Social Coast Forum. 2016. Charleston, SC.

Stancioff, E. "Building Sea Grant's Resilience Toolbox: Maine Lobster Community Based System Dynamics Model". Joint Summit of the Sea Grant Sustainable Coastal Communities and Sea Grant Climate Networks. May 11, 2016. Saint Louis, MO.

Stancioff, E. , Hart, and Whitehead. "Engaging Coastal Communities: Success and Lessons Learned from Sea Grant Climate Extension". National Adaptation Forum for Sea Grant. May 13, 2016. Saint Louis, MO.

Griffis, Whitehead, **Stancioff, E.**, Glazer, Arnold, and Score. "Engaging Coastal Communities: Success and Lessons Learned from Sea Grant Climate Extension". National Adaptation Forum for Sea Grant. May 14, 2016. Saint Louis, MO.

Stancioff, E.; Northeast Coastal Acidification Network: Understanding the science of coastal and ocean acidification presentation at the Northeast Aquaculture Conference and Exposition. January 16, 2016. Portland, ME.

Yarborough, D. "Climate Change Effects on Wild Blueberry in Maine." Wabanaki Cultural Center and Museum. November 4, 2016. Calais, ME,

Yarborough, D. "World Production Numbers Today/Tomorrow and Maine Wild Blueberry Crop Report and Maine Wild blueberry Systems Analysis." Annual Meeting of the Wild Blueberry Producers Association of Nova Scotia. November 18-19, 2016. Truro, NS.

Yarborough, D. "Blueberry Crop Trends 1996 -2016." Wild Blueberry Association of North America Annual Meeting. December 14, 2016. Ellsworth, ME.

Yarborough, D. "World Production Numbers." PEI Wild Blueberry Growers Association Marketing and Production Workshop. January 18, 2017. Charlottetown, PEI.

Yarborough, D. "Analyse comparative des différentes régies de production au Maine." Journee de Information Bleuet. March 15, 2017. Dolbeau-Mistassini, Quebec.

Yarborough, D. "L'effet des changements climatiques sur le bleuet sauvage." Journee de Information Bleuet. March 15, 2017. Dolbeau-Mistassini, Quebec.

Yarborough, D. "World Crop & Market Outlook and The effects of climate change on Wild Blueberries." Bleuet New Brunswick Blueberry Annual General Meeting. April 1, 2007. St. Andrews, New Brunswick.

Yarborough, D. "Maine Wild Blueberry Systems Analysis." PEI Blueberry Information Day & Annual Meeting of the PEI Wild Blueberry Growers' Association. April 4, 2017. Charlottetown, PEI.

D. Curricular Innovations

So You Want to Farm in Maine? Central Maine training was offered live in Bangor with option to utilize Zoom for live streaming and archived and offered through YouTube. Sixty participants registered from 35 farms.

Elderberry Variety Trials and Growers Support: An elderberry variety trial is being installed at Highmoor Farm in June/July 2017. This grant-funded project will compare 12 varieties for commercial production in Maine. Elderberry growers have recently formed the Maine Elderberry Growers' Association (MEGA) with faculty advisors including Tori Jackson, Marjorie Peronto and David Handley. An article on elderberries was published in the Portland Press Herald in early June and Maine Public will feature MEGA on its daily radio show Maine Calling on August 11.

UMaine Climate and Agriculture Network: Increased communication and coordination among those working on issues related to climate and agriculture. Initiated in 2015, the network to date has hosted guest speakers, organized researcher and graduate student mini-symposiums, developed a farmers fact sheet, and facilitated new collaborations on at least two grant proposals.

U.S. & Canadian Organic Grain Network: Developing, with colleagues from New Brunswick and Vermont, a cross-border organic grain network to facilitate communication among organic grain farmers in the Northeast, Atlantic Canada and Quebec. Includes shared educational events and the new NEEOGrain (Northeast US and Eastern Canada Organic Grains) listserv.

Multi-campus Program Integration: Over the past year Extension has held 4-H programs at UMaine Machias and USM. These programs were integrated with local staff and students, giving youth realistic college campus experience. Programs included a Robotics Expo and Mini-Forum, both of which were a success and will occur again next year.

Foster Center for Student Innovations: Dr. Jason Bolton and 4-H Professional Laura Wilson participate in Foster Center programs for youth, small businesses, and food entrepreneurs. Dr. Beth Calder, Dr. Louis Bassano, and Dr. James McConnon have collaborated in offering our Recipe to Market course for aspiring food entrepreneurs. Dr. Bolton was the Innovation Engineering Academic Director for FY 2017 and will continue in the role for FY 2018.

National 4-H for Health Curriculum: Maine 4-H faculty collaborated in creating and testing a new nutritional and physical activity guide for 4-H youth. This curriculum is part of Healthy Kids Out of School, an initiative of ChildObesity180 at Tufts University Friedman School.

Expanded Use of Digital Badges: Expansion of 4-H digital badges beyond the four digital badges currently being issued to 4-H STEM Ambassadors through the Engaged Black Bear program.

Expeditionary Skills for Life: 4-H Partnership with NASA. UMaine Extension is part of a national team that created educational content/lesson plans on cultural competencies for youth ages 5-19.

Telstar Freshman Academy (TFA): Recognizing educational challenges on the horizon, including the required implementation of proficiency-based diplomas, MSAD 44 in Bethel, took an innovative approach to fostering student success. A collaborative effort was born between the district's Telstar High School and UMaine's 4-H Learning Center at Bryant Pond. The program uses experiential STEM and interdisciplinary project-based curriculum to engage students more fully with their learning. After two years, TFA has demonstrated outstanding academic success. Students gained several points above the national average on Northwest Evaluation Association (NWEA) measures of growth scores in science, reading, and language use. The program's success led in 2017 to a $600,000 multi-year grant from the Lerner Foundation that will be used to expand and enhance it.

IV. STUDENT ENGAGEMENT, STUDENT SUCCESS

Cooperative Extension is primarily community based and our program clients primarily non-academic. Our client success is community centered. Some highlights for 2016:

STEM Ambassadors: In 2016, with the support of the UMaine System Chancellor and Board of Trustees, the 4-H STEM Ambassadors program expanded to six of the seven UMaine campuses. Ambassadors are trained college students who act as caring mentors to youth, facilitate STEM activities with them, and help them learn about college and career options. Since 2015 121 ambassadors have reached over 1,200 youth with at least six hours of hands-on STEM activities. The program often engages in underserved communities.

Follow a Researcher™: UMaine Extension and UMaine collaborators created Follow a Researcher (FAR™) to increase youth understanding of research processes by engaging them directly with UMaine researchers in the field. In 2015, FAR™ engaged 200 youth and 40 adults from Maine and eight other states. In 2016, the program grew to 1,676 Maine youth (over 50 percent female), and 76 adults, and an additional 149 youth and 12 adults from other seven other states. Participating middle school teachers created curriculum related to the expedition, exposing youth to science in their classrooms in new and engaging ways. The Follow a Researcher name was trade marked to protect the intellectual property being developed within this innovative program.

Twelve-year-old Children's Author, JoJo Thoreau: JoJo Thoreau is a proud Maine 4-H member and young writer of published children's illustrated rhyming storybooks. Her first books are Bendy Wendy published at age 7, and Buckaroo Bobbie Sue at age 10.

V. PRESERVING/RESTORING INFRASTRUCTURE

A. Renovation or Construction Projects Completed

Plant, Animal, & Insect Diagnostic Lab: In November 2016 construction began on the new facility that is on schedule to be operational and occupied by the end of 2017.

B. Renovation/construction projects planned for coming year

4-H Camp and Learning Centers are engaged in active planning of several significant renovation projects of existing facilities that will be supported through private funding.

VI. SUMMARY OF ANTICIPATED CHALLENGES

Dickeya: A Continuing Challenge to the Potato Industry: In 2014 a new plant disease was identified in Maine. Dickeya is a disease caused by a bacterium that destroys tubers and withers plants. The disease was a serious concern for the Mid-Atlantic States in 2015 with some growers losing entire fields. It has appeared again in 2016 and 2017. The pathogen is transmitted on seed potatoes. Maine is a significant supplier of seed potatoes to over 20 states. Extension faculty have been working with colleagues from other states and growers from Maine and elsewhere to identify this disease and to develop management strategies that will prevent the spread of the pathogen and minimize losses. Within the potato industry there is considerable stress regarding this disease and some in Maine have been very supportive of Extension's work while others have been extremely critical.

Climate Change: We are challenged with maintaining our expertise as the effects of climate change alter the metrics of nearly everything we do within the Maine food system. Delivering up-to-date research-based education in a time of rapid change will continue to challenge our capacity. Many sectors of the state's economy continue to be challenged by drought.

4-H Camp and Learning Centers: Our 4-H camps face both challenges and opportunities in terms of their financial vitality. Two of the three camp locations (Tanglewood and Blueberry Cove) have infrastructure needs that are essential and expensive.

Aging Farmers, Fishermen, and Loggers continue to reach out to UMaine Extension for help in two significant ways. First, they need help maintaining their ability to farm while experiencing the physical limitations of aging. Second, many are facing succession issues that challenge their ability to pass on their operations on to future generations. Further, many under-capitalized young people are trying to break into these fields. Staff members from our AgrAbility program continue to work with UMaine faculty to determine the status and issues of aging farmers, fishermen and loggers in Maine so the program can help address important issues involving this population.

Food Safety Modernization Act (FSMA) of 2011 is a result of a Federal shift in priorities from *responding* to food safety issues to *preventing* them. The resulting rules are complex and overwhelming to both businesses and regulators. As this is an important element of Extension's Food System programming faculty are making every effort to interpret and disseminate accurate information. Extension will provide FSMA programming that covers two of the seven rules (Human Foods and Produce Safety). This will challenge the capacity of Dr. Jason Bolton and Dr. Beth Calder, and be a consuming focus for our new Food Science Specialist Dr. Robson Machado.

Meeting Farmer Veteran Needs: Maine has over 127,000 military veterans ranging in age from mid-twenties to over 80. In 2015 UMaine Extension was instrumental in helping to establish a Maine Chapter of the Farmer Veteran Coalition to help cultivate new of farmers and food leaders, and develop viable employment and careers through the collaboration of the farming and military communities. We continue to lack the personnel and capacity to fully address this important need in equipping individuals with practical and research-based agricultural skills and knowledge. Our goal is to design a menu of programs that meet the needs of military veterans who want to farm in Maine.

Lack of Financial Flexibility: With over $3.6 million in cumulative budget reductions over the last fourteen years, Extension has lost significant capacity to meet the needs of Maine people, and UMaine has lost capacity to fulfill its land-grant mission. For years the strategic focus has been dominated by how to do more with less and sustain the next round of budget cuts. In 2017 Extension did not have a budget cut and received an investment of 0.5 FTE of faculty funding. The lack of a budget reduction allowed for the filling of many long-vacant and critical faculty and professional positions. However, the capacity of Extension to respond to the many needs within our program areas of emphasis remains challenged.

VII. SUMMARY OF NEW INITIATIVES

4-H Camp and Learning Centers: To address critical infrastructure needs Tanglewood and Blueberry Cove 4-H Camps have initiated a fundraising "Campaign for Kids" focused on raising funds to support programs, scholarships and capital improvements. The fund raising goal is $1,200,000. Over $500,000 was raised before the July 29 public launch.

VIII. LICENSURE PASSAGE AND JOB PLACEMENT RATES – N/A

IX. SUMMARY OF PROGRAM REVIEWS – N/A