In 2014, we celebrated the 100 year anniversary of the signing of the Smith-Lever Act, which established the Cooperative Extension Service, a unique educational partnership between the U.S. Department of Agriculture and the nation’s seventy-two land-grant universities that extends research-based knowledge through a state-by-state network of extension educators.

University of Maryland Extension (UME) works to provide “solutions in your community” through key program areas including agriculture, environment and natural resources, 4-H youth development, food and nutrition, health and wellness, financial planning, home gardening and the Chesapeake Bay. These research based programs and services are available to all residents of Caroline County thanks to the tremendous support of our community members, local organizations, volunteers and our County Council.

Thank you to the residents of Caroline County for celebrating this milestone with us. We look forward to what the next 100 years holds. This 2014 annual report details how UME’s efforts extend knowledge to and improves the lives of Caroline County residents.
UME – Food Supplement Nutrition Education (FSNE) is a federally funded program that provides services in Caroline County. FSNE offers nutrition education programs to help Supplemental Nutrition Assistance Program (SNAP) households and those eligible for SNAP. FSNE programs are provided at no cost to support the work of community agencies serving SNAP-eligible individuals and families, such as literacy centers, local food banks, soup kitchens, WIC offices, senior centers, community centers, neighborhood groups, and homeless shelters.

In 2014, FSNE program educators engaged 182 youth participants in nutrition education programs and made 1,183 total contacts. Curriculum included Serving Up MyPlate which helps elementary school teachers integrate nutrition education into Math, Science, English, Language Arts, and Health for 1st grade through 6th. The curriculum introduces the importance of eating from all five food groups using the MyPlate icon and a variety of hands-on activities. Students also learn the importance of physical activity to staying healthy.

Serving up good nutrition Habits with MyPlate:
- After participating in FSNE nutrition education programs like Serving Up MyPlate, 8 out of 10 (83%) of students report consuming at least one fruit the previous day while 7 out of 10 (72%) consume at least one vegetable during that same time period.
- 65% of youth who participate in FSNE school-based nutrition education curricula like Serving Up MyPlate try at least one new healthy food.
- Students who try new foods during their time in a FSNE program consume at least two healthy foods, including fruits, vegetables, dairy products or whole-grain foods.

Nutrition Nuggets was also taught in 2014. This is a standards based nutrition education program created by USDA which allows teachers to incorporate nutrition education into the classroom while still meeting the common core standards. Each of the 12 lessons provides basic nutrition information as well as two activities that engage participants in a variety of food related tasks. This curriculum provides opportunities for students to develop cooking skills and to try new foods. Recipes are quick and easy to make and are designed for after-school sites.

Students make healthy choices with Nutrition Nuggets:
- 76% feel confident in their ability to prepare fruits and vegetables at home.
- More than 60% report liking both fruits and whole grains a lot; a significant preference increase post-program.

Up for the Challenge was also part of the 2014 FSNE outreach in Caroline County. This program is a fitness, nutrition and health curriculum containing multiple lessons on physical activity, nutrition and healthy decision making.

Nutrition education encourages youth to try a variety of healthy foods:
- 70% like vegetables and almost 90% like fruits and whole grains, post-program.
- 65% try at least one new healthy food during the program.
- Consuming at least two healthy foods including fruits, vegetables, dairy products, and whole grain foods post-program.

FSNE curriculum has been taught in partnership with the Caroline County Public Schools and Caroline County Recreation & Parks.

4-H Youth Development

According to a recent National 4-H study of 4-H youth development programs across America, 4-H members are 2x more likely to go to college; 2x more likely to study sciences; and 2x more likely to provide service in their communities. Since the year 2000, more than 95% of 4-H teens that graduated from Caroline County high schools have gone on to complete college or trade school. Many of these 4-H members are now serving in our communities as teachers, nurses or work in other medical fields and serve in leadership positions in their job setting and in community organizations.

45 Caroline County 4-H members documented a total of 1,683 hours of service in the county in 2013 (2014 data has not been turned in yet). This service includes collecting, assembling and donating first aid kit supplies for Habitat for Humanity families, gleaning vegetables for the Maryland Food Bank, organized food drives and serving the fair in numerous capacities, etc. According to Youth Serve America, youth that serve, have closer ties to their community.
Youth gain skills necessary to be successful in school, in the workplace and in life while practicing service. Youth who serve are more likely to have a strong work ethic. Those who volunteer as youth became the most generous in giving of their time as adults. At a value of $7 per hour (comparable to minimum wage) their service contributed a savings of $5,781 to the county in 2013.

Interest in livestock including small pets such as dogs, rabbits and cavies has increased. Animal projects expose youth to the cost and responsibility related to the ownership of an animal. Daily care is a must and is the responsibility of the 4-H member. In 4-H, youth and families spend quality time together. Club time is family time. Lifelong friendships occur as a result of the time and commitment of the 4-H members and their families

222 Caroline County youth ages 5-18 are active members of community and project clubs focusing on sewing, rabbits, dogs, horses, livestock, shooting sports, environmental and other projects.

4-H Afterschool in partnership with the 21st Century Afterschool county grant provides National 4-H STEM (Science, Technology, Engineering and Mathematics) programs and resources to 235 youth. Additionally, Afterschool members learn teambuilding, leadership and workforce preparation skills.

A Maryland Grain Producers grant written and managed by the 4-H Educator provided resources for school gardening projects at Federalsburg Elementary and Colonel Richardson Middle School. These clubs consist of youth with limited or no garden space at their homes. Students planted, weeded, nourished and harvested veggies from the gardens throughout the growing season. Food was gleaned and sent to the Maryland Food Bank. 4-H members were also able to take vegetables home to enjoy. Some members tasted these varieties of vegetables for the first time. The veggies were included in recipes to make tasty dishes enjoyed during Afterschool time. Additionally, salad consumption of the seventy-five 4-H members increased by 50%.

The following quotes from parents were provided sharing the benefits of 4-H Afterschool:

“My child is eating new and healthier foods, has learned to cook, enjoys gardening and is proud of what he has accomplished in Afterschool time.”

“My child has learned skills in cooking and chooses to make better choices regarding food”

Adventures in Health Science 4-H Club is a Talbot/Caroline County 4-H career exploration program that developed out of a partnership with the UM Shore Regional Health and the Eastern Shore Area Health Education Center. Health careers is the largest employer of residents of the mid shore. During 2014, an average of 11 diverse youth participated in monthly meetings and explored more than ten new careers through interaction with medical professionals and tours of medical facilities. This club now serves several students attending high school biomedical programs.

The 4-H Educator served as co-writer, manager and program leader for two grants that benefited youth in Caroline County totaling $2,127. Proceeds from various civic and individual donations including 4-H fundraisers contributed $4,605 to the county program. The In Kind value of the estimated time of volunteer’s hours was 2,720 hours. The value of their time at $25.43 per hour as determined by the independentsector.org Maryland data was $69,169.60
Diverse financial choices are pressuring the level of personal financial knowledge for residents to grow as consumers accept more responsibility with their financial choices. The newest member of the Caroline County Extension office, Dr. Melissa Leiden Welsh plans to help the residents of the Eastern Shore region tackle these financial challenges and find financial solutions within their community. Dr. Leiden-Welsh received her doctorate from Purdue University in December of 2014 in Youth Development and Agricultural Education. She received her master’s degree from The Pennsylvania State University in Youth and Family Education and her Bachelor’s from Indiana University of Pennsylvania in Family and Consumer Sciences Education. Her additional credentials include a national certification in Family and Consumer Sciences as well as being a Certified Personal and Family Finance Educator.

While at Purdue, Melissa represented the Department of Youth Development and Agricultural Education as a Graduate Senator in the Purdue University Graduate Student Government, served as an officer in the Purdue Collegiate 4-H and was featured in the graduate student AG Research Spotlight for the College of Agriculture in the Fall of 2014. She received the North American Colleges and Teachers of Agriculture graduate teaching award and an outstanding research poster award from the American Association for Agricultural Education. Melissa’s dissertation was entitled: Graduate Students’ Motivation to Teach Plant Sciences to K-12 Audiences. Prior to studying at Purdue, Melissa taught Family and Consumer Sciences for 12 years in rural schools in Pennsylvania.

Dr. Leiden-Welsh is excited to begin working with Eastern Shore county agencies and community groups with financial literacy programs. While her office will reside in Caroline county, she will provide assistance and Extension programing for the residents of Cecil, Kent, Queen Anne’s and Talbot counties. She believes her background in agriculture and educational work in rural communities will support connecting rural residents with financial educational solutions within their community. She is also interested in developing programs to fill voids in financial literacy for adults and children within the five counties.

Jim Lewis provides numerous educational presentations around the state in the areas of sorghum production, soybean maturity selection, cover crops, BMP’s, and irrigation management.

Jim is involved in several research projects being conducted in Caroline County, including:

- Using iron slag to remove phosphorus in tile drains;
- Identifying highest yielding maturity group soybeans under irrigation;
- Effects of nitrogen fertilizer applications and N2O losses from farms;
- Water quality/BMP (best management practices) project with UMCES – Horn Point, helping with TMDL/WIP (total maximum daily load/watershed implementation plan);
- Effects of utilizing switch grass on septic drain fields, helping with TMDL/WIP;
- Utilizing poultry litter in soybean production;
As a result of UME classes offered in Caroline County:

- 76 farmers with private pesticide applicator licenses were recertified.
- 83 farmers with nutrient management applicator vouchers were recertified.
- 234 commercial pesticide applicators were recertified.

Jim made recommendations to clientele on fertility, irrigation, soil management, nutrient management, weed control, insect control, disease management, hay/pasture management and vegetable production.

**Maryland Sustainable Agriculture**

Nevin Dawson took the new Sustainable Agriculture Coordinator position in December 2013, and has completed his first full year in his new role. Major funding for the position comes from Northeast Sustainable Agriculture and Education (NE SARE), with additional funding from internal UME sources. The primary duty of this role is to design and coordinate educational programs for agricultural service providers (ASPS). A secondary duty is to provide outreach on SARE and SARE grant programs. Other duties include grant writing assistance and updates for the UME and ASP community.

Dawson conducted a needs assessment to choose the initial direction for his professional development programming, and found general agreement that one topic was in particular need of development: soil health. After extensive study and discussions with state and national experts in soil health, Dawson designed a three-year project that includes the hosting of field days, webinars, demo workshops, and one-day meetings; and the development of fact sheets, bulletins, and videos.

Using a list of ASP’s, including contacts from UME, ag associations, certified crop consultants, ag lenders, local government food policy directors, ag marketing professionals, MDA, non-profit organizations, NRCS, soil conservation, nutrient management advisors and USDA, Dawson has begun promoting participation in the project. Most events are open to all ASP’s, with some being limited to a smaller group of ASP’s with an interest in hosting their own soil health programming for farmers.

Dawson also taught a hands-on shiitake log inoculation workshop and will be hosting a statewide webinar for ASPs on Good Agricultural Practices and the Food Safety Modernization Act.

Dawson has developed a website with ag-related grant resources, the centerpiece of which is a directory of currently open ag-related grants. This directory is emailed monthly along with additional relevant news to ag service providers. Dawson also provides advice on selecting and applying to grant programs based on individual project ideas, with a focus on the five NESARE grant programs. Dawson coordinated a statewide grant writing workshop, a webinar on research design and methodology, and a series of informational meetings about NESARE grant programs.

**Nutrient Management**

**An Economic Value of over $135,000 to the Caroline County Agriculture Community**

Caroline County has 113,830 acres that are harvested as cropland according to the USDA 2012 Census of Agriculture.

In 2014, the Caroline County Nutrient Management program through Nutrient Management Advisor, Craig Yohn, served 146 cooperators that collectively managed 29,117 acres (25.6% of Caroline County harvested cropland) through 492 plans (a value of $131,027). Included in those plans were poultry operations that manage over 3.3 million birds per flock on 45 operations.

A Phosphorus Site Index (PSI) was completed on 170 fields to ensure proper management of phosphorus.

A pre-side dress nitrogen test for corn fields that had received animal manure was conducted for 883 acres which recommended the saving of 7,961 pounds of N (a savings of $3,980).
Sea Grant Program

The Regional Watershed Restoration Specialists organize and hold a variety of educational programs for the Mid and Upper-Eastern Shore related to the University of Maryland Extension’s Sea Grant Extension Program and serve as part of the Watershed Protection and Restoration Program. The Specialists provide educational programs focused on helping local and county governments and watershed groups to plan, develop, implement, and monitor projects and programs that lead to quantifiable reductions in nonpoint sources of pollution as outlined in various Watershed Implementation Plans. They serve as a critical interface between communities and other sources of knowledge and aid in building local capacity. In partnership with Caroline County and several municipalities, the specialists’ assisted with capacity building and technical assistance related to the towns of Ridgely, Greensboro, and Marydel, and in unincorporated areas. Specifically, they aided in stormwater best management practice (BMP) identification, nutrient load reduction estimation, grant-writing assistance, and community visioning.

Regional Watershed Restoration Specialist (behind the camera) attending a meeting at the new Caroline County Dept. of Emergency Services facility near Denton with officials from the Maryland Department of the Environment and U.S. Environmental Protection Agency to discuss the use of porous pavement as a stormwater BMP.

Inset: Using a hose to demonstrate how efficient porous pavement is at allowing water to flow through it and into the stone underneath, ultimately reducing stormwater runoff.

Eric Buehl
Agent Associate & Regional Watershed Restoration Specialist
ebuehl@umd.edu

Xaviera Davis
Nutrition Educator & Project Leader-Midshore Food Supplement Nutrition Education

Nevin Dawson
Sustainable Agriculture Coordinator
ndawson@umd.edu

Cathy Kimbles
AED/FCS/Nutrient Management
ckimbles@umd.edu

JIM LEWIS
Extension Educator
Agriculture and Natural Resources
jlewis2@umd.edu

Sharon Pahlman
Extension Educator
4-H Youth Development
spahlman@umd.edu

Wendi Potter
Administrative Assistant II
4-H/AG/Nutrient Management
wpotter@umd.edu

Sara Rich
Area Extension Director
srich1@umd.edu

Dr. Melissa Welsh
Extension Educator
Family and Consumer Sciences
drmwelsh@umd.edu

Craig Yohn
Nutrient Management Advisor
cyohn@umd.edu

Phone: 410-479-4030
Fax: 410-479-4042
extension.umd.edu/Caroline

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