

CONNECTIONS

ACHIEVEMENTS EDITION 2020

DON'T HURRY INTO

HEMP

By Brad Bergefurd & Bradford Sherman*South Centers/CFAES*

Although now legal to grow hemp in Ohio, farmers should be cautious of immediately investing a lot of time and money into this risky crop, warns Horticulture Specialist Brad Bergefurd of The Ohio State University.

The passage of Senate Bill 57, signed into law in mid-December, decriminalized hemp and paved the way for the development of a new industry in the state. However, factors such as the high cost of planting and harvesting the crop, a potential for taking a total loss due to elevated tetrahydrocannabinol (THC) levels, and a market price in decline make it hard for experts like Bergefurd to recommend to farmers.

"It was an interesting year to say the least, we sure learned a lot," said Bergefurd. He along with co-worker and soil and water researcher Dr. Rafiq Islam were members of a special Hemp Task Force comprised of 25 Ohio State University researchers and Extension specialists within the College of Food Agriculture and Environmental Sciences (CFAES).

Bergefurd and Islam, together in 2019, led a field trial of the controversial crop at OSU South Centers in Piketon that was one of only two planting sites in southern Ohio.

See HEMP Page 2

HEMP from Front

They partnered with fellow agriculture and natural resources Extension educators David Dugan (Adams County) and James Morris (Brown County) to design, plant, maintain, and manage data collection and analysis on the pair of cannabidiol (or CBD hemp) plantings. The other site was located in an open field near the Acela CBD warehouse in Winchester, and represented the largest planting in all of Ohio at around an acre in size.

While 2019 marked the first time that hemp was legal to plant in Ohio since prior to World War II, Governor Mike DeWine did not sign the bill, permitting limited growth of the crops for research purposes, into law until August. This was extremely late in the year and the crop at Piketon suffered.

"Hemp is very photoperiod sensitive in that short days trigger the crop into a reproductive stage of growth," explained Bergefurd. "With legalization not going into effect until August, this was way past the summer solstice, therefore with the shorter days, the hemp never vegetatively grew and remained short at Piketon, greatly reducing yields."

However, the Winchester site was provided 24 hours of light each day, from planting through October, with the addition of portable lighting that lit up the entire field from dusk until dawn. This modified the plants' environment and tricked them into a vegetative stage of development, allowing for larger plant size and increased yield.

Hemp is an annual plant that looks and smells like marijuana, so you cannot visually tell a difference. Unlike marijuana, hemp is low in THC, the chemical that can trigger a "high." Legal hemp in Ohio must have 0.3% THC or less, while marijuana plants have much more. Farmers in other states that have already legalized hemp years ago get paid by producing product that with a high percentage of CBD and low percentage of THC; any hemp higher than 0.3% THC is not allowed to be harvested or sold and is a total loss to the farmer.

Lab analysis of samples taken at Piketon and Winchester showed a high percentage of CBD, but also high percentages of THC. "These high THC results made us very uneasy, for if this was a farmer's crop, it would be confiscated and not allowed to be sold," said Bergefurd.

Research Associate Thom Harker, who performed the analysis of data, says there seems to be a correlation between the moisture content and the CBD and THC levels. "As the moisture goes



RIGHT: The Winchester hemp growing site was provided 24 hours of light, from planting through October, with the addition of portable lighting, which lit up the entire field from dusk until dawn. This modified the plants' environment and tricked it into a vegetative stage of development, allowing for larger plant size and increased yield.

down, the percentage of CBD oils go up," explained Harker, "but unfortunately, THC levels rise also."

As for the Adams County plants, those with an average moisture of 44.5 percent were within the legal limits of THC at .23 percent. However, when moisture levels dropped to an average of 13.4 percent, THC rose to .5 percent, making them unsellable. The same relationship between moisture and CBD/THC levels also held true for the smaller plants grown at Piketon.

As if the potential for a total loss on a crop was not bad enough, the costs associated with planting and harvesting the crop are also high. Preliminary results of the 2019 research indicate that hemp costs between \$10,000 and \$15,000 per acre to plant.

Also, hemp requires as much or more "hand and stoop" labor as tobacco, hops, or tomatoes. "This is not a crop that can be grown from a tractor seat," added Bergefurd, "specialized planting equipment and drying facilities are also required."

Bergefurd says the biggest takeaway from the 2019 season is that farmers **MUST** have a market lined up and a contract in hand, but that does not always guarantee a profitable crop, either.

“These high THC results made us very uneasy, for if this was a farmer’s crop, it would be confiscated and not allowed to be sold”

Brad Bergefurd

Horticulture Specialist

The price of CBD has dropped more than 50% in three months this season, and there is now a national oversupply of hemp, contributing to many of our neighboring farmers in Kentucky and West Virginia, despite having contracts with processors, not getting paid for their 2019 crop.

"The 2019 hemp season was one for learning and will help us to educate growers

on what is required to be successful with this crop in the future," Bergefurd said.

With no research funding available for hemp at the present time, CFAES administration graciously offset some of the preliminary research costs for 2019 through the purchasing of plants, and members of the task force shared specialty equipment and extra field supplies to get preliminary trials planted.



CONTENTS



Cover Story: *Don't Hurry Into Hemp*

Newly-legalized hemp is one of the hottest topics in agriculture, and many are eager to hop aboard the hype train. Horticulture Specialist Brad Bergefurd, together with journalist Bradford Sherman, examines the risks this crop presents for farmers.



In her address, she mentions South Centers and talks about the achievements of Dr. Hanping Wang and his aquaculture team, who were, in her words, “successful in raising faster-growing fish...resulting in significant savings in fish food and in time waiting to sell them.”

It's great to see our center being recognized on this very important stage, congratulations to our aquaculture team. At right is a screen capture from that particular point in the address, at around the 19-minute mark of her speech.

Read more about this achievement on pages 15 and 16.

Features

Taking Care of Business.....Pages 4-7

A deeper look at The Endeavor Center, a business incubator and place for business-minded people of the region to meet.

15 Years, 15 Minutes.....Pages 10-11

Scientist Rafiq Islam spent 15 years developing a soil test kit, which now takes just 15 minutes for farmers to get a picture of their soil health.

A Cup of Coffee with Dr. Dan.....Pages 12-14

Dr. Dan Remley talks health and motivation as the subject of our latest staff profile.

Program Areas

Business.....Page 8

Soil and Water.....Page 9

Specialty Crops.....Pages 16-17

Aquaculture.....Pages 18-21

Co-ops.....Pages 22-23

Marketing.....Pages 24-25

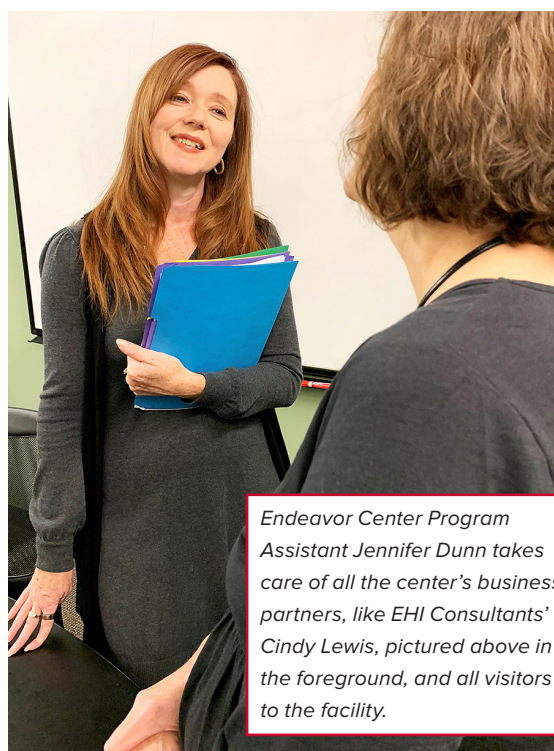
2020

STATE *of the* COLLEGE ADDRESS

Hopefully everyone had an opportunity to attend or view the State of the College address delivered by Dean Cathann A. Kress on January 10. If you missed it, you can watch it now by heading over to the link below:

go.osu.edu/cfaes2020





Endeavor Center Program Assistant Jennifer Dunn takes care of all the center's business partners, like EHI Consultants' Cindy Lewis, pictured above in the foreground, and all visitors to the facility.

Southern Ohio center endeavors to make business ventures successful

(Editor's Note: This story originally appeared on the CFAES website on January 10, 2020)

Story and photos by
Bradford Sherman
South Centers/CFAES

Nestled in the rolling hills of southern Ohio, around an hour and a half drive from The Ohio State University Columbus campus, is a unique gathering place where business-minded people of the predominantly rural community can meet, learn, and even house their start-up.

Some staff members there call it "one of the state's best-kept secrets." That may indeed be the case for many parts of Ohio, but residents of Pike County and the surrounding area know the Endeavor Center well as a vital meeting hub, the go-to for all of their business questions, and an integral part of their healthy, vibrant community.

See [ENDEAVOR Page 5](#)

“Office space, office equipment, and networking ... these components are all important to help a community grow both educationally and financially”

Ryan Mapes
Endeavor Center Manager



ENDEAVOR from Page 4

As a 27,000 square foot business incubator located on the campus of the OSU South Centers in Piketon, the Endeavor Center is home to a variety of new and emerging companies looking to gain a foothold in the marketplace. Its primary mission is to provide these businesses with the resources and expertise they need to grow in a rapid and sustainable way, and in turn, increase the economic vitality of the region.

“Our Endeavor Center melds business assistance resources and staff expertise to foster a climate of entrepreneurship to southern Ohio,” said Dr. Thomas Worley, OSU South Centers Director. “The business incubator’s very name, Endeavor, is meant to convey a spirit of ‘whatever it takes’ approach toward making a venture successful.”

Built in 2005, the facility consists of a wide variety of professionally furnished office spaces with multiple classroom and conference spaces available to host meetings, workshops, and seminars. The center’s services, some free and others paid, are available to any professional organization for various business-related purposes.

“We provide resources for existing and start-up businesses to thrive, including office space, office equipment, and networking opportunities. These components are all important to help a community grow both educationally and financially,” added Endeavor Center Manager Ryan Mapes.

Mapes expanded by breaking down the assistance the Endeavor Center offers to clientele into four primary forms:

1) access to professional, flexible office space; 2) access

to expert, free business counseling (SBDC); 3) access to advanced communications technology and professional office equipment; and 4) opportunities to network and learn from other successful small businesses.

Within the last five years, the Endeavor Center and its business partners, which includes the SBDC, have created more than 600 high-skill, high-wage jobs, adding more than \$75 million of direct economic activity to the local community.

The center’s small business development counselors have helped more than 80 businesses overcome obstacles to growth by supplying strategic and space resources required for expansion. This resulted in the graduation of more than a dozen partners to build their own facilities or expand into larger facilities.

One such partner is Innovative Solutions (InSolves). It was one of the center’s first tenants and an anchor business for many years that, during the height of its residency, occupied eight office spaces and three manufacturing bays. InSolves graduated from the center in 2018 by purchasing nearby real estate and moving its operations into its own 20,000 square foot facility along U.S. Highway 23 in Piketon.

“The program worked, we graduated from the Endeavor Center and moved into our place – that is the mission of the Endeavor Center,” said InSolves Vice President Steve Barbarits, whose company first chose the Endeavor Center partly due to its convenient location near its clientele as well as for the facilities and support offered by its staff.

See ENDEAVOR Page 6

ENDEAVOR from Page 5

“It made sense for us to be close by where we could on-board employees, and also, for the manufacturing space. We utilized three of those high bay manufacturing areas. That allowed our customers at the Piketon site to easily come over and look at work in progress, or discuss changes to a particular manufacturing project.”

Barbarits also praised the low overhead that allowed his company to stay lean and be competitive with other companies, and especially the convenience of having certified business counselors located on the premises.

“The small business services just being a couple of doors down the hall really helped anytime we needed advice or mentoring,” he added. “As a small business, you have to rely on people who understand what it is like to run a small business. All the folks from Tom Worley to Ryan Mapes, and every one of their staff, were willing to go above and beyond to help us.”

The Endeavor Center’s long and prosperous relationship with InSolves led to a current partner, Probatum Technologies, also taking up residence in the incubator. Probatum President Rick Warner was a former manager at InSolves who still does consulting work for the firm, but in 2009, he decided to rent space for his own technology company.

Since 1999, Warner’s Probatum Technologies has been part of the fight against the well-publicized prescription and non-prescription drug abuse epidemic plaguing

southern Ohio by providing case management solutions to community corrections agencies.

As technology has evolved, so has the company. It has been moving away from the local machine-based PC program and is now developing a cloud-based, mobile app called Casano. It is a mobile phone application that takes the form of a game aimed at the treatment of drug and alcohol addiction.

“We deliver challenges to the person on a daily basis that address thinking patterns, behaviors, and circumstances that contribute to elevated risks or needs that contribute to the likelihood of them re-offending,” Warner explained.

“These come in the form of a quest. They start out in a dark cave and they end the quest over a period of months or years, in some cases, on a mountaintop. There is compelling gameplay that happens based on the completion of the challenges.”

Casano is currently being tested by around 100 people in a pilot program, with hopes of deploying commercially within the next year.

In addition to InSolves and Probatum, the list of the different types of businesses that have partnered with the Endeavor Center over the years has been wide-ranging. Those partners who have called it home included an orthodontist, woodworkers, manufacturers, financial consultants, insurance agents, and the Endeavor Center has housed unique activities such as laboratory testing, and soon, a fitness center.

See ENDEAVOR Page 7



Groups like Kirchhoff Automotive, pictured above, regularly use the meeting spaces at the Endeavor Center to hold important meetings, workshops, and seminars.

ENDEAVOR from Page 6

"I think that just goes to show the flexibility our center has, in its ability to meet the small business needs of the community," said Mapes. "The center also hosts training events and workshops on a wide variety of topics by partnering with other program areas at the South Centers and many community organizations."

While its primary function is as a business incubator, many locals simply know the Endeavor Center as a place to meet and learn. The classroom and conference spaces are used constantly by area business entities, even those not housed inside the center.

It is because of this, the Endeavor Center always seems to be buzzing. With the bevy of people coming through the door every day, it takes a special person to make sure those guests have everything they need and everything goes off without a hitch. For the Endeavor Center, that person is Jennifer Dunn.

Dunn has become synonymous with the Endeavor Center, having filled her important role since beginning her career at South Centers in 2011. Her working title is Program Assistant, but it does not begin to describe all of the different roles she fills on a daily basis.

She might be best known for handling the booking of all meeting rooms for the facilities, but also performs administrative duties for partners housed at the Endeavor Center and the South Centers business team, as well as coordinates meetings, events, catering services, deliveries, and more. Moreover, just as important as all of that – she is the first point of contact for anyone visiting in person or calling by phone.

"It is the different people we get to serve here," Dunn said, when asked about what she enjoys most about working at the Endeavor Center. "You get to meet someone new from the area, or traveling from afar. We have individuals who come from all over the United States and internationally."

"You have the same core set of responsibilities including customer service, coordinating meetings, and taking care of logistics, but it is like a different job every day, in that there is always a different face."

Like the Endeavor Center she serves, Dunn certainly carries a reputation for being professional and for top-notch organization. She believes in proper planning and being ready for anything.

"You have to have a Plan B if Plan A fails," she explained. "When you deal with unpredictable things on a daily basis, you had better have a backup plan. If the electricity goes out, or if the first network for Wi-Fi goes down, you need a backup ready for those things."



The Endeavor Center is a 27,000 square foot business incubator committed to providing its partner businesses with the resources and expertise they need to grow in a rapid and sustainable way, and in turn, help increase the economic vitality of the region..

Employees like Dunn are an integral part of the center's second mission, of operating as a true, successful small business – providing customers (our business partners housed in the facility) with top rate service while maintaining the facilities in a sustainable, profitable manner. The center's knowledgeable and accommodating staff, who strive to provide businesses with all the resources needed to be successful, are aimed at this second mission.

"Our business counselors are all very committed to the communities we serve and place a high priority on helping clients achieve their dreams of operating a successful business and thereby strengthening the local community and economy," added Worley.

Mapes also pointed out that, in addition to the small business development counselors, the Endeavor Center also provides businesses support through the Manufacturing Extension Partnership (MEP), Export Assistance Program, and Center for Cooperatives, which focuses on the cooperative business model. These associated programs are well connected in the business community and can act as a gateway to many statewide resources.

A full directory of Endeavor Center staff, including counselors who can help realize the dream of starting or growing a business, is available on the South Centers website at southcenters.osu.edu.

Room rental inquiries should be directed to Dunn by calling 740-289-1605 or emailing dunn.595@osu.edu. Those who are interested in renting a space inside the Endeavor Center, or becoming a virtual partner, should contact Mapes at 740-289-2071 ext. 231 or email mapes.281@osu.edu.

Save the Date

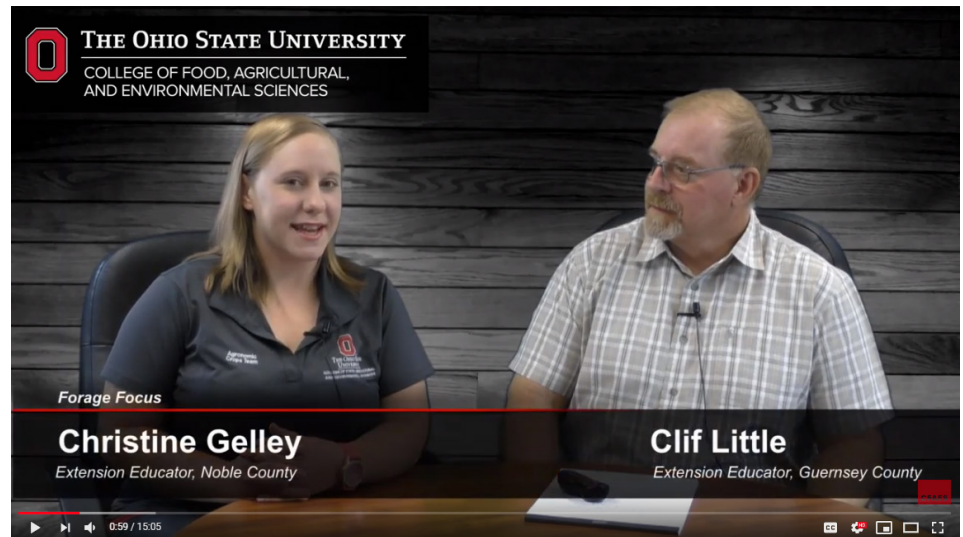
Business awards/ training session

On May 5, 2020, the Ohio State University South Centers Small Business Development Center will be hosting an event that will award and recognize our small businesses in Southern Ohio.

Small businesses will have the opportunity to apply for either the Small Business of the Year Award or the Start-Up Small Business of the Year.

This event will also offer training sessions and local resources to grow and strengthen our small businesses in the region.

More details will be coming soon.



South Centers-produced video wins award

Noble County Extension Educator Christine Gelley, along with the South Centers video production team of Patrick Dengel, Duane Rigsby, and Sarah Swanson were presented with an award during OSU Annual Conference.

Gelley and her producers won first place in the video interview category for their video titled *Invasive Weeds in a Pasture*. Her guest on the May 2019 episode was Guernsey County Extension Educator Clif Little.

The award was made possible through the recognition program of the Ohio Join Council of Extension Professionals.

To see the winning video and more from Gelley and the entire South Centers production team, head over to [YouTube.com/southcenters](https://www.youtube.com/southcenters).

ANNA ADAMS JOINS FRONT OFFICE TEAM

By Bradford Sherman
South Centers/CFAES

Anna Adams has joined The Ohio State University South Centers staff as a Program Assistant and as part of the front office team.

Her educational background and experience in the agricultural sector, which includes being the founder and manager of the Adams County Farmers Market as well as assisting her family farm at home, made her an ideal candidate for joining the research and Extension side of South Centers.

Fittingly, she will be working closely with Brad Bergefurd and Christie Welch, both of whom have programming suited to her particular

skill set. She will take the lead on organizing the various events held at South Centers and at partner sites around the state.

"I'm very excited for the opportunity to be a part of South Centers," said Adams. "I think my background in agriculture will certainly aide me in my new role, but I know I also have room to grow and am looking forward to learning as much as I can from Brad, Christie and all of my new co-workers."

Adams comes to South Centers by way of the SNAP-Ed program, for which she worked as a Program Assistant since 2014 in Adams and Clermont counties. Through SNAP-Ed, Adams helped participants lead healthier lives by teaching them about good nutrition, how to make their food

dollars stretch further, and encouraged them to be more physically active.

Adams earned her Bachelor of Science degree in food and nutrition services from Ohio University, and a master's degree in Agriculture and Extension Education from The Ohio State University.

In her new role as part of the front office staff, Adams is already learning what many who have come before her already know, that every day is a new challenge.

"I think that is what I am going to love the most about my new job, that every day there is something new. It helps keep things interesting," she said.

Adams and her husband, John, reside in West Union.

From Burkina Faso to Piketon: Dr. Compaore collaborates with soil/water program

By Dr. Rafiq Islam

SWBR Program Leader

Dr. Emmanuel Compaore, Head of the Soil Chemistry Division of INERA, Ouagadougou, Burkina Faso, recently studied at The Ohio State University as a short-term visiting scholar for one month with the Soil, Water, and Bioenergy Resources Program.

He is one of the leading soil scientists in Burkina Faso. His professional development training was focused on conservation agriculture related to long-term, no-till cropping diversity with cover crops and soil amendments with agroecosystem services.

Moreover, he received training on our sophisticated laboratory equipment and tools, and vast resources of computing, statistical, and library facilities to improve his data analysis and interpretation capability.

In return, we benefitted from his research experience and training, and cultural activities acquired in Burkina Faso.



Dr. Emmanuel Compaore, right, shakes hands with South Centers Director Dr. Tom Worley.



Dr. Rafiq Islam, program leader of the Soil, Water and Bioenergy Resources program at OSU South Centers speaks at the 4th International AgTech Summit in Kazakhstan.

OSU's science-based knowledge translation to Republic of Kazakhstan

By Dr. M.A. Rahman

Post Doc Researcher, South Centers

Dr. Rafiq Islam, program leader for Soil, Water, and Bioenergy Resources at The Ohio State University South Centers, was invited on behalf of the Kazakh National Agrarian University to participate in the 4th International AgTech Summit, held December 6 at the main campus of the Kazakh National Agrarian University in Almaty, Republic of Kazakhstan.

AgTech Summit covered a wide range of topics that related to the development of agricultural science, education, and business and brought leading scientists and experts together with representatives of business and government authorities from the Republic of Kazakhstan and other countries.

Dr. Islam's applied research and Extension outreach interests aligned well with the objectives of the summit. He delivered a presentation titled 21st Century Climate Smart Agriculture in Relation to Kazakhstan at the plenary session of the opening day of summit. He also delivered another presentation titled Healthy Soil, Healthy Food, and Healthy People at the sustainable agriculture session.

This collaboration between The Ohio State University and Kazakh National Agrarian University was established via a research project (Strengthening U.S. and Kazakh Scientific Capacity through Joint-Institutional Agricultural Teaching, Research, and Outreach Development) by Islam and others, and funded by American Councils for International Education and U.S. Embassy in Kazakhstan.

15 YEARS 15 MINUTES

South Centers scientist Islam recognized by University for soil test kit commercialization

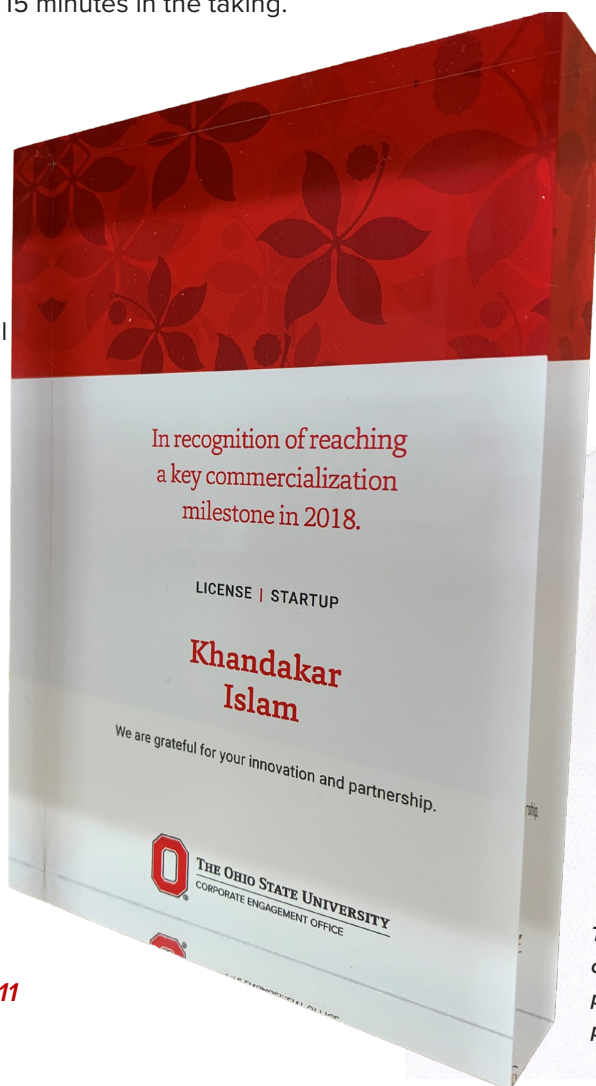
By Bradford Sherman
South Centers/CFAES

For Dr. Khandakar (Rafiq) Islam, it was an experiment 15 years in the making, and the result was 15 minutes in the taking.

Fifteen years ago, Islam began developing a soil test kit that was affordable, and so convenient and simple to use that any landowner could use it to make informed decisions concerning soil health and the potential for agricultural productivity — all within just 15 minutes.

“Farmers would come to me and say, ‘Rafiq, can you make something that we can use in the field and 10-to-15 minutes later, we can know the quality of the soil?’” Islam recalled, when asked about his inspiration for developing the test kit. Fast forward to today and now an estimated 1,000 kits have been sold, and been utilized by farmers, scientists, and scholars all around the world.

See ISLAM Page 11



The award in recognition of reaching a key commercialization milestone, pictured left, was presented to Dr. Rafiq Islam, for successfully patenting a soil test kit for the common man.



LEFT: The signature feature of the soil test kit developed by Dr. Rafiq Islam is convenience. Unlike many other methods, it can be used in the field and data can be had in as little as 15 minutes. The results are also color-coded for ease of interpreting the results.

ISLAM from Page 10

The Ohio State University South Centers scientist, who leads the Soil, Water, and Bioenergy Resources program in Piketon, was awarded a patent for the technology earlier this year. For achieving this key commercialization milestone, Islam is among the faculty members recently recognized for their innovations by The Ohio State University.

“Discovery is at the core of our academic mission at Ohio State and we have a deep appreciation for the meaningful work you do to drive innovation and better society,” Kevin Taylor, Associate Vice President of Technology Commercialization within the university’s Corporate Engagement Office, penned in a letter to Islam and his fellow innovation award recipients. “You discover life-changing technologies ... and pursue knowledge to solve real-world problems and create new opportunities for our communities.”

The signature feature of this soil test kit is convenience. Unlike many other methods, it can be used in the field and data can be had in as little as 15 minutes. The results are also color-coded for ease of interpreting the results.

“It is non-toxic as well, it only uses one chemical,” explained Islam. “It is reliable and convenient to use in the field; and very fast, in 15 minutes you are done.”

In addition to its domestic success and utilization, the test kit has also been used abroad as part of Islam’s extensive studies in Africa, Asia, and Europe. Much of his attention has been focused in the eastern European country of Ukraine, where he has distributed many of these test kits to local farmers. Islam says access to technology like that

included in his test kit is extremely important for the nation of Ukraine and its people.

“They do not have the facilities, so they cannot perform routine soil tests like we do in the United States,” Islam said. “They care about land, but do not know how to manage it. They do not regularly have access to diagnostic information.”

Ukraine is an important country as it pertains to helping achieve global food security in the face of the growing world population. While the nation exported 280 million tons of food last year, according to Islam, they have the capacity to export more than 500 million tons.

“Ukraine had some of the best soil in the world, but now most of their soil has degraded because of the Soviet style,” he added. “They are interested in improving their soil quality so they can revitalize the soil, and produce more food and export.”

This one-step basic field test kit contains enough reagent and testing supplies for approximately 15 field soil tests. The kit consists of a heavy-duty case containing 30 ml of reagent, water resistant instruction sheet and color chart, glass-mixing bottle, 5-gram measuring scoop, four black plastic soil trays, a stainless steel spatula, and 2 ml backup dropper.

A professional version of the kit is also available and is designed to be more heavy duty with an upgraded case and upgraded pipettor system for quicker and more precise reagent dispensing. It also contains enough reagent and testing supplies for approximately 45 tests.

The soil test kit is now available to purchase starting at \$45 for the basic kit, and \$95 for the professional version. You can visit soil1.com to find out more, or purchase a kit.

STAFF PROFILE

a cup of Coffee



(Editor's Note: The following is the latest in a series of feature stories highlighting Ohio State University South Centers Staff members)

By Bradford Sherman
South Centers/CFAES

As he was preparing to sit down for this interview, Dr. Dan Remley made a conscious decision to pass up the Styrofoam coffee cup in favor of a glass mug.

"It is kind of a New Year's goal of mine," he revealed. "I think we can all do our little part."

For 17 years, Remley, an associate professor and field specialist for food, nutrition, and wellness, has led programming at The Ohio State University that has revolved around that same premise – helping people make mindful choices and inspiring internal motivation.

Through programs like *Dining with Diabetes*, *Voices for Food*, and *HEALth MAPPS*, Remley uses those same principles to help educate people on how to manage their chronic illnesses and for disseminating knowledge to help build healthier communities.

"You have to be motivated in order to take care of yourself," said Remley, who identified "motivation" as a common thread between his programs. "In Extension, we are in a position where we can help people apply information to their lives, and realize why they need to make a change. I think it is really important to help people discover these internal motivations, and answer the question, 'why would I want to make these changes in my life?'"

See REMLEY Page 13

REMLEY from Page 12

Although his appointment is statewide, Remley is based at the South Centers in Piketon, which puts him at ground-zero for one of the unhealthiest areas of the entire state. Pike County ranked as the 87th out of 88 counties in health outcomes (length and quality of life) and was in the bottom 10 for health factors, according to the 2019 report published by the Robert Wood Johnson Foundation and the University of Wisconsin.

It is a region-wide problem with neighboring counties Adams, Jackson, Scioto, Ross, and Highland all landing in the bottom quarter of the overall health rankings. Why is this particular area so unhealthy? Some of it is cultural, such as the popularity of fried foods, but there are larger issues at play as well, according to Remley, such as joblessness leading to a sense of hopelessness, poverty, and rampant drug use.

“Education is really important (to combat these problems), people need to have the skills and the motivation, but they also need to live in environments where they can make healthy choices,” explained Remley. “You have to work at both levels in order to make significant change.”

Two of the programs Remley leads that are specifically aimed at bringing about change in communities are *HEALth MAPPS* and *Voices for Food*.

HEALth MAPPS is a community-based research process that makes use of modern technology to help community members become aware of how the features within their community can be helpful or detrimental to residents’ ability to eat healthy and be active.

The process that uses photography, mobile device technology, and residents’ voiced perceptions to address food access, healthy eating, and physical activity. Coordination involves working with community partners, local extension offices, and campus faculty to plan, implement, and evaluate the program.

In *Voices For Food*, considered by Remley to be his signature program, communities are aided in starting food councils. These councils look at their communities’ food systems, as a whole, and work to bring together partners to make healthy food more accessible and fight food insecurity.

A great example of the work done by food councils is in the area of food pantries. They work with pantries to promote the “choice” method of food distribution, the benefits of nutrition, and encourage the inclusion of offerings suitable to people with chronic illnesses or food allergies.

See *REMLEY* Page 14

Voices for Food program looking to expand into more counties

RELATED STORY

Voices for Food, a program developed by a multi-state Extension team, provides tools and resources to promote healthy food access and food security. It aims to bring together, empower, and amplify the many voices necessary to improve the food security and well-being of those living within impoverished communities.

Now, the program is looking to expand into more counties for 2020, particularly rural communities. Internal funds are available for Extension offices who are interested in implementing Voices for Food.

“Limited resources often challenge food insecure populations to have healthy dietary patterns, increasing the risks for obesity and diet-related chronic diseases,” explained Dr. Dan Remley, who leads the program.

“The healthcare costs associated with chronic diseases often further limit people’s financial resources, compounding their food insecurity. In addition, acquiring healthy foods and managing food dollars can be especially challenging in impoverished rural communities that lack full-service grocery stores, markets, and other food services.”

Remley added that community organizations, food pantries, and food insecure families do not always engage with one another to address these challenges. Consequently, communities miss opportunities when they do not capitalize on local human, natural, and financial resources to address health and food insecurity.

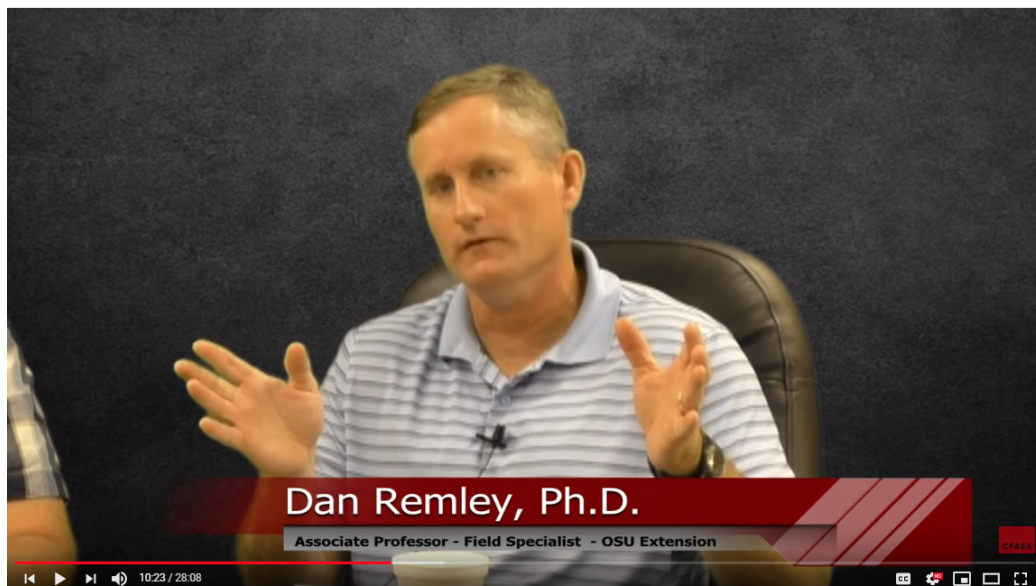
“The success of this project depends on the collective impact of the voices present in the community: the food sectors, food pantries, churches, schools, local government agencies, food insecure families, volunteers and other community champions,” he said. “All community members have valuable abilities, unique experiences, and vital ideas to contribute.”

See *VOICES* Page 15

You can learn more about Dr. Dan Remley's programming, and other food, nutrition, and wellness topics, by watching his monthly program on YouTube.

Use the following go-link to access a playlist of Remley's educational videos:

go.osu.edu/FoodWellness



REMLEY from Page 13

"About a third of the people who come into food pantries have diabetes or some kind of chronic illness, where they have to watch their diets and try to eat healthy," said Remley.

"We want to see choice, also because it is a more dignified experience," Remley stated. "Letting people choose food based on what they need and what they want, instead of just giving them boxes or bags of food they can't use or don't want, is a far more efficient way of distributing food."

Food choice is no more important than in the Dining with Diabetes program, one in which Remley, himself, can relate as a Type 1 diabetic. He has been living with diabetes since the age of 20, and he uses the knowledge he has gained, both personally and professionally, to help other learn to live with the disease.

"I was interested in working with it because of my own experiences. Since I have been living with it, I have a pretty good understanding and can help people make sense of all the overwhelming information they get, especially when they are first diagnosed."

Dining with Diabetes is a national

program spanning 38 states, including Ohio, where there are projected to be 15-20 counties holding classes in 2020. Remley serves as the chairperson of the national group; in this role, he helps develop the curriculum, develop evaluations, and train educators to deliver the programming.

"Many of the people in our classes have just recently been diagnosed with diabetes, so they really don't know how to manage their blood sugar," he explained. "When they come to our classes, we give them a basic understanding of diabetes, and also show them healthy ways to prepare main dishes, sides, and desserts that are low carb, low sodium, and low fat."

"We try to help them understand the idea of meal planning, carb counting, and how food affects their blood sugars. Four sessions long. A lot of social learning going on, they learn from each other."

The long-term complications of unmanaged blood sugar are serious and can include eye diseases, kidney problems, stroke, heart disease, and problems with the nervous system.

In addition to eating properly, staying active is also a key component of proper diabetes management. In his free time, Remley practices what

he preaches by staying fit through activities like hiking, and playing tennis and pickle ball.

And much like his programs aim to accomplish, Remley wants to do his part to make his community a little healthier and a better place to live. Every journey begins with a single step, or in this case, the passing up of a single Styrofoam cup.

"I am also interested in sustainability and helping people think about how we can lessen our footprint. Going back to the Styrofoam cup – that is something I am trying to do," he said.

"If we can we lessen our footprint, we can ensure that our kids and grandkids inherit a world where they can have a higher quality of life."

Remley earned a bachelor's degree in Zoology from Miami (OH) University and received his master's in Science and Public Health from Alabama Birmingham. He earned his PhD in Nutritional Sciences from the University of Kentucky. He worked at the University of Missouri before coming to The Ohio State University in 2002.

Remley resides in Chillicothe with his wife, Heather, and their two youngest children, Allison and Matthew. Their oldest daughter Katie is attending Ohio University.



VOICES from Page 13

PROGRAM OBJECTIVES:

Through changes in policies, systems, and environments:

- Participants will choose healthier food options and adopt healthier eating practices.
- Participants will access resources and services to improve their household food insecurity.
- Participants will become more aware and engaged in food systems & activities.

Internal Extension funds

Financial support (up to \$10,000) for over three years is available for Extension offices to implement Voices for Food activities. Extension offices selected for the project will be responsible for submitting a yearly budget proposal for consideration. A committee of Extension professionals will decide upon which items to fund. Funding might support:

- Developing or strengthening a community food council
- Developing or strengthening MyChoice food pantries
- Training Voices for Food

Ambassadors to promote nutrition and food safety within the community and MyChoice food pantries

- Implementing affiliated policies, systems, and environmental changes

Awardees will have access to Voices for Food guides, toolkits and materials.

The state Voices for Food team will provide training, coaching and peer support to all awardees.

WHO IS ELIGIBLE TO APPLY?

Extension offices who have SNAPed, or an EFNEP educator and at least one educator representing 4H, Ag, Community Development, or Family and Consumer Sciences are eligible. One Extension educator or coordinator must agree to serve as a community coach. In addition, applicants should preferably identify a food pantry director and a food council chair within the community as partners within the application.

Requirements

Awardees will be required to adhere to the following grant project requirements:

- Awardees will send a representative to a 1-day training in community coaching, facilitation

and the Voices for Food project.

- All members of the local project team will attend a webinar training on the Voices for Food Project.
- Each community coach will attend a monthly webinar to discuss project activities and troubleshoot problems.
- Awardees must submit a basic end-of-project report using SNAPed indicators, pictures and stories. The state Voices for Food team will use this information eventually in a Story Map.
- Awardees shall submit a project budget request once a year for funding consideration.

HOW TO APPLY

Contact Dr. Dan Remley by calling 740-289-2071 ext. 241 or by emailing remley.4@osu.edu.

NOTIFICATION AND AWARD FULFILLMENT

A committee of Extension professionals who have received training in Voices for Food will review the applications. The committee will notify successful applicants by February 14, 2020 via email. A webinar training will share additional information about the project.



Another FRUITFUL Year for the Small Fruits Team

By Dr. Gary Gao
Professor and Extension Specialist

The year 2019, the 25th at The Ohio State University for Dr. Gary Gao, has been a fruitful one for the newly-minted professor and his small fruits program at South Centers in Piketon in the areas of Extension, research, international collaboration, and professional service.

"Our Extension programs and presentations reached more than 900 people through direct contacts and thousands more through newspaper articles, online videos, and Facebook updates," said Gao.

"Our research efforts led to several promising blueberry rootstocks for Ohio and beyond. We identified at least 10 highly promising cultivars for Ohio growers to expand their acreage and diversify their farming operations through our cultivar trails. Both of their Extension and research efforts help create and/or retain jobs, mitigate risks, and improve profitability of a fruit industry that faces many challenges in Ohio."

Dr. Gao's international collaboration has brought four visiting scholars, one from Brazil and three from China.

See FRUITS Page 17

FRUITS from Page 16

Gao has served as a University senator at The Ohio State University and a national Vice Chair for the National Association of County Agricultural Agents.

More information of these highlights from the past year are outlined below.

Extension

Gao and his fruit Extension and research team members conducted three major outreach programs: the Blueberry, Bramble, and Wine Grape Pruning School on March 14; Fall Fruit Field Night on October 10; and the Grape and Wine Analysis Workshop on December 5, 2019 at OSU South Centers in Piketon.

Dr. Gao served as a planning committee member for the Ohio Grape and Wine Conference and the OPGMA Produce Network (Congress) that were held in Dublin. Dr. Gao also gave presentations at a few programs across the state including the Columbus Dispatch Home and Garden Show (February 9), Fruit and Vegetable Program for GreenStar Coop (February 28), Fruit Pruning and Training (March 9), Small Farm College (March 30), Southwest Ohio Perennial Flower School (April 11), Extension Sustainable Ag. Tour (June 26), and the Butler County MG Fruit Training (October 30).

Ryan Slaughter, a member of the small fruit Extension and research team, gave a presentation on container fruit production at the 2019 Farm Science Review. Dr. Gao also wrote two trade magazine articles for the American Fruit Grower magazine and contributed more than 10 YouTube videos with the help of Duane Rigsby and Sarah Swanson at South Centers.

Research

Several funded projects were carried out in southern Ohio (Piketon), central Ohio (Columbus), and northern Ohio (Avon Lake and Mansfield) over the course of the past year. Gao submitted the final report for his grafted blueberry rootstock project, four quarterly reports and an annual report for the viticulture Extension project, an annual report for the bramble and hardy fig and kiwi project, and an annual report for the intelligent sprayer project.

Through their research efforts, they were able to identify

some promising rootstock selections and cultivars, cold hardy fig and hardy kiwi cultivars, and several new bramble cultivars. Gao has several manuscripts in preparation as the senior author and had one paper published in the February issue of Scientific Reports (<https://doi.org/10.1038/s41598-018-38230-x>) as a co-author.

International Collaboration

Dr. Gao welcomed Dr. Jiuxing Lu, a faculty member of the Forest College of Henan Agricultural University, to South Centers in May 2019. Dr. Lu has been actively involved in all small fruit research projects and several Extension programs.

Three of Gao's visiting scholars, Yanliang Chu (Jiangsu University of Science and Technology in China), Ricardo Bordignon Medina (ESALQ/USP in Brazil), and Dr. Pengfei Wang (Shanxi Agricultural University in China) have completed a highly successful one-year training at The Ohio State University and returned to their respective home countries in 2019.

Gao also gave several Extension presentations, guest lectures, and research updates as a part of his international collaboration with faculty members of Henan Agricultural University and Shanxi Agricultural University in China.

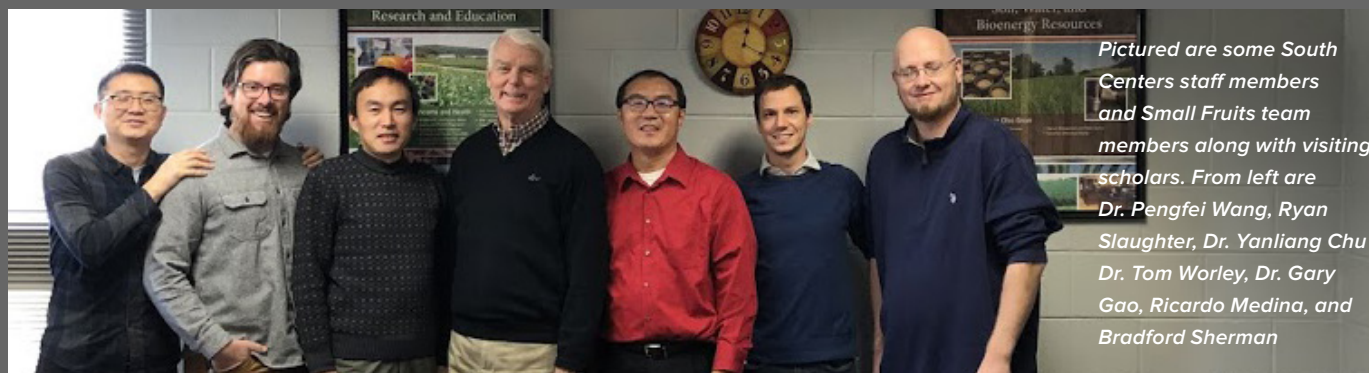
Professional Service

Dr. Gao started his three year term as a university senator and served on the Evaluation of Central Administration Committee as a member of Faculty Council for The Ohio State University. He also served on the SEEDs panel for the College of Food, Agricultural, and Environmental Sciences.

As a graduate faculty with PhD advising status, Gao served as a graduate faculty representative for a PhD final exam on April 29, and attended a committee meeting on December 5 as a member of Piao Yang's PhD committee.

Dr. Gao also delivered a guest lecture for a HCS class on November 20 in Columbus.

Lastly, Gao served as the National Vice Chair of the Professional Excellence for the North Central Region for the National Association of County Agricultural Agents. He also reviewed manuscripts for the Journal of Extension, Agronomy Journal (MDPI), and Atmosphere (MDPI).



Pictured are some South Centers staff members and Small Fruits team members along with visiting scholars. From left are Dr. Pengfei Wang, Ryan Slaughter, Dr. Yanliang Chu, Dr. Tom Worley, Dr. Gary Gao, Ricardo Medina, and Bradford Sherman

BIGGER FASTER

Aquaculture Center is transferring fast-growing fish to the aquaculture industry



ABOVE: OCARD-created fast-growing bluegill male vs. female in the same family

By Dr. Hanping Wang
Program Leader, Aquaculture

Funded by the USDA and NOAA-Sea Grant, the Ohio Center for Aquaculture Research and Development (OCARD) at The Ohio State University South Centers has developed technology for the production of commercial-scale, fast-growing monosex yellow perch and bluegill — both top aquaculture species in the Midwest and North Central Region. Now, OCARD is transferring these fast-growing monosex fish to the aquaculture industry.

Faster-Growing All-Male Bluegill

Bluegill males grow significantly faster and larger than females. All-male monosex populations are needed by the aquaculture industry. OCARD at Piketon has created a technology that can generate large numbers of fast-growing, all-male bluegill populations. All-male or near-all-male bluegill populations were successfully produced and tested.

*See **BIGGER FASTER** Page 19*



ABOVE: Fast-growing yellow perch created by OCARD

BIGGER FASTER from 18

Results from testing all-male or near-all-male bluegill populations at two locations showed: 1) weight gain and growth rate of all-male stock were 2.1 times as that of regular stocks; 2) all-male groups had significantly uniformed size and lower coefficient of variation; and 3) survival of all-male groups was significantly higher than that of mixed-sex groups due to more uniformed size.

A successful creation of genetically male bluegill strains would have a tremendous impact on the sunfish aquaculture industry by increasing the growth rate by 30-35% and saving energy expenditure of 20-30% for sex growth. In the past few years, the aquaculture team at Piketon has created a large number of all-male producing broodstock of bluegill. We are using the broodstock to produce a commercial-scale of all-male monosex bluegill and disseminating them to the aquaculture industry for demonstration. Large aquaculture farms has been identified for the farm demonstration.

Faster-Growing All-Female Yellow Perch

Yellow perch females grow significantly faster and larger than males. OCARD at Piketon has created a technology that can generate large numbers of fast-growing, all-female yellow perch populations. A growth performance test of the all-females vs. a mixed-sex group showed that all-females grew 26.3% faster than the mixed group, and 66.0% faster than males. In the past few years, OCARD has created a large number of neomale broodstock of yellow perch with a female genotype. We are using the large numbers of superior neomale broodstock to produce a commercial-scale of all-female monosex yellow perch and transferring them to aquaculture industry for demonstration. A few aquaculture farms have been identified for the farm demonstration. All-female monosex populations will significantly benefit the aquaculture industry.

AQUACULTURE BOOT CAMP-2 SUCCESSFULLY COMPLETED

By Dr. Hanping Wang

Program Leader, Aquaculture

The OSU South Centers and the Ohio Center for Aquaculture Research and Development (OCARD), in partnership with the Ohio Aquaculture Association (OAA) and University of Wisconsin–SP (UWSP) and Wisconsin Aquaculture Association (WAA), have successfully completed three years of Aquaculture Boot Camp-2 (ABC-2).

The ABC-2 offered new and beginning farmers integrated training in aquaculture/aquaponic production and business management strategies with the “3-I” levels: Intensive, an in-depth level involving immersion in a year-long hands-on training and mentoring program; Intermediate, a mid-level involving participation in a variety of learning activities; and Introductory, a general level where sharing of information is the goal.

See ABC-2 Page 20



ABC-2 from 19

The program offered a multi-faceted approach, including classroom and hands-on training, paired with industry mentoring to enhance the sustainability of new and beginning aquaculture/aquaponics and next generation farmers in the Midwest. ABC-2 completed all the goals on all the “3-I” levels, outlined below.

Intensive

Twenty-four monthly informative educational modules and classes were completed in aquaculture/aquaponics and related business/marketing in Ohio and Wisconsin during the past three years. Each module was designed to coincide with seasonal activities on a typical aquaculture/aquaponic farm, so that a participatory hands-on training events can simultaneously occur each month. 105 highly motivated, new and limited resource fish farmers and aquaponic producers have been trained through the Intensive program, and 35 pilot-scale aquaculture/aquaponics practice projects were completed by the intensive students. Twenty-one new businesses/farms have been created by the 2017 and 2018 ABC-2 Intensive course graduates.

Intermediate

ABC-2 Intermediate was also offered over the past three years. This less-intensive training allowed participants to choose among the 12 monthly modules and three workshops, one conference and one bus tour in both Ohio and Wisconsin per year. Twelve general workshops in aquaculture and related business and four bus tours of aqua-farms were conducted for both Intermediate and Intensive students. Six conferences were held for all the “3-I” level students; around 900 new and beginning farmers gained knowledge of aquaculture/aquaponic production and new technologies by participating in ABC Intermediate workshops and bus tours.

Introductory

Digital recordings of the ABC-2 Intensive training classes and practices were conducted and edited. An ABC-2 website was developed and has links to aquaculture information,



podcasts, and updates of ABC-2 activities. Additionally, ABC-2 Introductory provides training and information through facility tours, individual and group counseling, phone, and email. Other than new farmers trained in Intensive and Intermediate programs, more than 9,000 participants gained new knowledge by accessing ABC Introductory and ABC website tools, and Newsletters, emails and phone system.

Internship

The ABC, OAA, and WAA have established an internship program designed to provide apprentice-type training opportunities for new and beginning aquaculture farmers and give established farmers a chance to mentor newcomers. Twelve in Ohio and Wisconsin received training through ABC/OAA/WAA internship program through the ABC-2 program.

Mentoring Leadership and Guidance

With the ABC program, the OAA and WAA provided mentoring leadership and guidance for new and small rural farmers. The activities included coordinating the ABC-2 mentoring and internship programs, providing annual conferences and a bus tour of aquaculture farms, facilitating cooperation among new farmers and existing farmers, compiling and distributing information on aquaculture/aquaponics for new and small rural farmers, and creating and maintaining the ABC-OAA/WAA websites. ABC specialists worked together with OAA and UWSP/WAA staff to enhance OAA and WAA's website, newsletters, and marketing strategies/opportunities. ABC-OAA's and WAA's annual conferences were organized, and 24 issues of aquaculture/aquaponics newsletters were published in Ohio and Wisconsin through the ABC-2 program.



Aquaculture team publishes book, 12 scholarly articles during 2019

The aquaculture team at The Ohio State University South Centers published a book and 12 scholarly articles in 2019. The book *Sex Control in Aquaculture* by Drs. Hanping Wang, Francesc Piferrer, and Song-Lin Chen was published by Wiley & Blackwell. Bradford Sherman, Joy Bauman, Sarah Swanson, and Jordan Maxwell assisted in English editing and chapter coordination.

The first comprehensive book of its kind, with two volumes and forty-one chapters, *Sex Control in Aquaculture* covers basic theory for sex control and sex control practice in major aquaculture species worldwide. In addition to the book, the aquaculture team published 12 scholarly articles in 2019 in high impact journals such as *Frontier Genetics*, *Frontier Physiology*, *Scientific Reports* and *Fish, Shellfish Immunology*, and *Aquaculture nutrition*. Bradford Sherman contributed to all the publications through language editing work. The following is a list of the 12 published articles:

Comparative transcriptome analysis reveals potential evolutionary differences in adaptation of temperature and body shape among four Percidae species. 2019. *PLoS ONE* 14(5): e0215933.

Global diversity and genetic landscape of natural populations and hatchery stocks of largemouth bass *micropterus salmoides* across American and Asian regions. *Scientific Reports*. 9, 2019.

Sex Determination, Differentiation, and Control in Bluegill. In: *Sex Control in Aquaculture* (Wang, H.P., F. Piferrer & S.L. Chen Ed.). Wiley-Blackwell. 2019.

Development of a Genomic Resource and Identification of Nucleotide Diversity of Yellow Perch by RAD Sequencing. *Front. Genet.* 2019.

Sex determination and monosex female production in yellow perch. In: *Sex Control in Aquaculture* (Wang, H.P., F. Piferrer & S.L. Chen Ed.). Wiley-Blackwell. 2019.

Processed soybean meal as an alternative protein source for yellow perch (*Perca flavescens*) feed. *Aquacult Nutr.* 2019; 25:917–931.

Sex Control in Aquaculture: Concept and Practice. In: *Sex Control in Aquaculture* (Wang, H.P., F. Piferrer & S.L. Chen Ed.). Wiley-Blackwell. 2019.

Processed soybean meal as an alternative protein source for yellow perch (*Perca flavescens*) feed. *Aquacult Nutr.* 2019; 25:917–931.

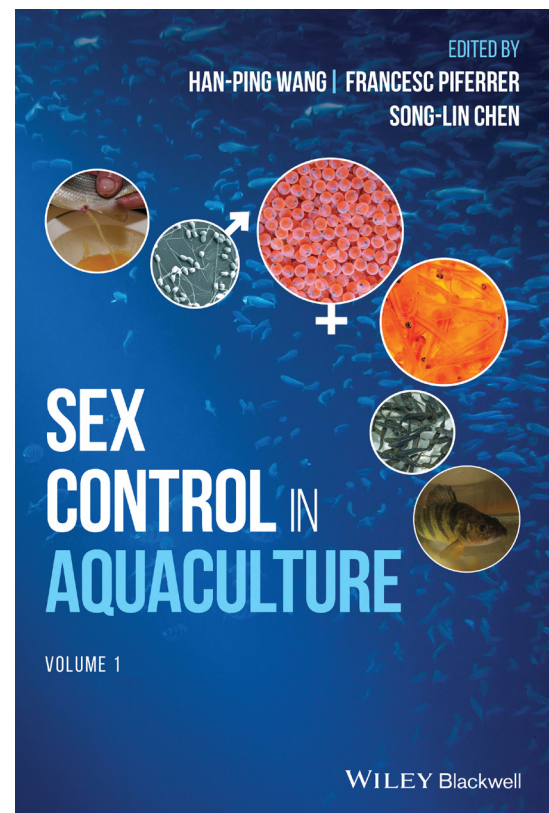
Sexual dimorphism in body size and form in yellow perch. In: *Sex Control in Aquaculture* (Wang, H.P., F. Piferrer & S.L. Chen Ed.). Wiley-Blackwell. 2019.

Environmental Sex Determination and Sex Differentiation in Teleosts – How Sex Is Established. In: *Sex Control in Aquaculture* (Wang, H.P., F. Piferrer & S.L. Chen Ed.). Wiley-Blackwell. 2019.

Hybridization and its application in Centrarchids. In: *Sex Control in Aquaculture* (Wang, H.P., F. Piferrer & S.L. Chen Ed.). Wiley-Blackwell. 2019.

Diet Supplemented With Synthetic Carotenoids: Effects on Growth Performance and Biochemical and Immunological Parameters of Yellow Perch (*Perca flavescens*). *Front. Physiol.* 2019

Astragalus membranaceus nanoparticles markedly improve immune and antioxidative responses; and protection against *Aeromonas veronii* in Nile tilapia. *Fish and Shellfish Immunology* 2019, 97: 248–256.

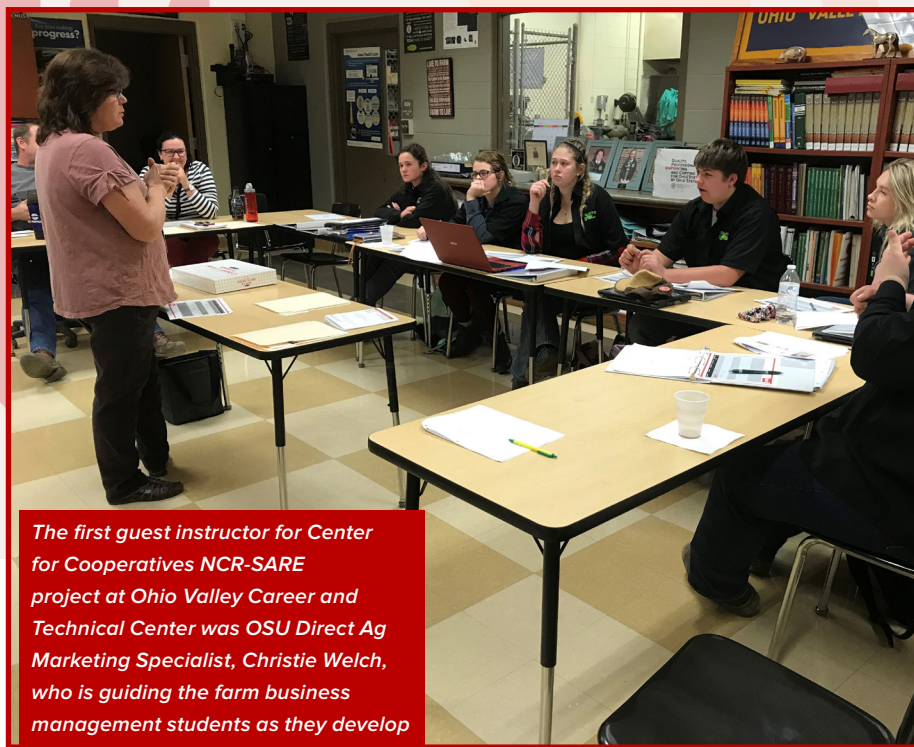


Center for Cooperatives kicks off 3-year student cooperative project

By Joy Bauman
*Program Specialist,
Center for Cooperatives*

The CFAES Center for Cooperatives staff is excited to have started a new project funded by North Central Region Sustainable Agriculture Research and Education (NCR-SARE).

The project incorporates teaching sustainable production and marketing using the cooperative model for the student-managed school farm cooperative at the Ohio Valley Career and Technical Center (OVCTC).



The first guest instructor for Center for Cooperatives NCR-SARE project at Ohio Valley Career and Technical Center was OSU Direct Ag Marketing Specialist, Christie Welch, who is guiding the farm business management students as they develop a marketing plan for the school farm.

In November, the project team met at OVCTC near West Union, in Adams County, Ohio to make plans for the three-year project, which formally kicked off with the students on January 8. The project team, led by Hannah Scott and Joy Bauman from the Center for Cooperatives, includes OSU Extension Direct Ag Marketing Specialist Christie Welch, retired co-op executive and consultant Dennis Bolling, Bill Wickerham, Adams County Soil and Water Conservation District Conservation Specialist and Adams County farmer marketing grass-fed beef, as well as OVCTC Agriculture Business Management Instructor and FFA Advisor Luke Rhonemus.

Since 2016, the CFAES Center for Cooperatives team has worked with Mr. Rhonemus and his 11th and 12th grade students to restructure the management of the school farm. The Center staff taught students the basics of the cooperative business model, met with students to learn about their farm, and helped students explore the ways their farm could be operated as a co-op. The team worked directly with a small group

of students to develop the co-op's bylaws and board structure. In October 2018, students began operating the 300-acre farm under a cooperative structure. Students contribute an initial membership fee of \$20 or six hours of labor on the farm to become members of the co-op. Their membership makes them eligible to vote, run for the co-op board, and receive patronage refunds from the co-op. Student members are expected to contribute labor to the farm, which they track in the FFA's Agriculture Experience Tracker project management system.

Currently, the students produce beef cattle, market hogs, meat goats, corn, soybeans, hay, firewood, maple syrup, and honey. Major decisions for the farm are made through the co-op board. Mr. Rhonemus is a member of the board and helps guide the

students in their decision-making. Income from the farm will ensure that the farm is economically viable. When surplus is generated, the board can choose to return the surplus to student members based on the labor they have contributed to the operation.

The purpose of the NCR-SARE project is to enhance and examine the impacts of a student cooperative learning program. The Center for Cooperatives will educate OVCTC students on the cooperative business model and best practices in co-op management. Collaborating with retired cooperative executive Dennis Bolling will provide real-world perspectives on co-op management. "With many co-op managers nearing retirement, training the next generation of co-op leaders is critical to the cooperative community," said Bolling.

See STUDENTS Page 23

STUDENTS from 22

Agricultural marketing specialist Christie Welch is teaching students about marketing concepts like pricing, packaging, and customer demographics using MarketReady® training. Welch has conducted two learning sessions with the students and they have begun developing and implementing a marketing plan for the numerous products produced on the school farm. “After the very first session the students began putting what they learned into action in order to market freezer pork from 20 market hogs they will send for processing in February and March,” said Welch.

The Center will also collaborate with local farmers and agricultural leaders to share their experiences using innovative marketing and environmentally sustainable production practices. Farmer and SWCD Conservation Specialist Bill Wickerham will lead and coordinate the education around those topics, collaborating with other area farmers and ag and conservation specialists. Wickerham explained that his goal is to expose students to innovative approaches and develop their agricultural knowledge. He will be guiding the students as they develop environmental management plans for the school farm.

“By assisting the students in developing the marketing and environmental plans for their enterprise, it will help develop the students’ planning and business management skills, while hopefully increasing farm profitability,” said Joy Bauman who will be working closely with the students throughout the project. She explained that students will then implement these plans on their cooperatively managed school farm using seed funding from this project.

Center staff will collaborate with students to monitor project activities and outcomes to determine successful strategies for teaching young people about the cooperative model and

fostering entrepreneurship in rural communities. Team members will assess the success of these strategies on the school farm by tracking activities and examining the farm cooperative’s financial health. Changes in students’ knowledge and attitudes will be examined and feedback will be gathered on the education techniques. Using this information, the team plans to develop a digital toolkit for cooperative developers, educators, and Extension professionals to create similar cooperative learning programs for youth farms, greenhouses, and gardens.

With the OVCTC farm in its infancy as a student cooperative, Mr. Rhonemus and his students are interested in increasing their knowledge about best practices in cooperative management, developing their understanding of agricultural marketing. The cooperative business model is a promising opportunity for school farms because of the stable nature of the model and the possibilities it affords students. Cooperatives are owned and controlled by their users and provide benefits to their users, often by returning financial surplus to user-owners. Co-ops can be avenues

for reaching new markets and realizing efficiencies.

Bauman concluded, “Enhancing students’ knowledge of cooperative best practices and providing them with real-world experiences in cooperative management will help them to better understand the agricultural supply chain, prepare them for career opportunities in agribusiness, develop their practical business skills, and to expose them to an innovative business model.

“As members of a cooperative, students have a personal interest in doing what is best for their farm co-op,” Bauman said. If the farm is productive and profitable, the students personally benefit through patronage refunds that they receive based on the hours of labor they contribute to the farm, but only after they ensure the financial viability of the operation. Not only do students have the opportunity to earn some money for college or other expenses, students who may not have an agricultural background can develop practical agricultural knowledge and skills. All of these experiences are valuable in a rural, Appalachian community where opportunities for students can be limited.



In autumn 2019, key project team members met with OVCTC Agriculture Business Instructor and FFA Advisor Luke Rhonemus and leaders from the student cooperative board to review the three-year project timeline and plan project activities.



Pictured are the presenters at the Ohio Farmers Market Sustainability Planning. From left are Jaime Hadji of Ohio Farmers Markets Network; Michelle White, Ohio Farmers Markets Network; Laura Biasillo, Agricultural Economic Development Specialist, Cornell Cooperative Extension of Broome County; Jessica Douglas, Healthy Exchange Project Manager, Greenmarket GrowNYC; and Christie Welch, Program Manager, OSUE Direct Food & Agricultural Marketing Team.

OSU Extension Direct Food & Agricultural Marketing Team

2019 ACHIEVEMENTS

By Christie Welch

Direct Marketing Program Manager

Direct Food & Ag Marketing Team focus:

The Direct Food and Agricultural Marketing team is focused on providing training, education, and technical assistance to Ohio's food producers and marketers. The goal of this assistance is to help these small businesses increase their marketing effectiveness and profitability. This should translate to healthier farms, food producers, and the communities where they reside, as well as increase access for consumers to locally produced foods.

The team has been selected to receive a \$81,316 grant from the North Central Region Sustainable Agriculture Research and Education Program (NCR-SARE) for the project, "Professional Development for Ohio Farmers Market Managers and OSU Extension Educators on Creating a Culture of Data Collection for Sustainability Planning for Markets and Farmers."

Collaborating on the project are the Farmers Market Coalition and the Ohio Farmers Markets Network. "This project will provide training for farmers market stakeholders on meaningful data collection and use for markets and vendors to use in developing sustainability plans," said Direct Food and Agricultural Marketing Program Manager Christie Welch. Beginning in early 2020, the project will be carried out over a period of three years and will help to benefit Ohio farmers' market with decision-making information.

In 2019 the team provided many trainings and educational presentations throughout Ohio. Highlights of these include:

- **MarketReady** – A one-day workshop that helps local food producers explore various market channels: direct to consumers, direct to restaurants, direct to wholesale, and direct to institutions. The workshop focuses on the main business functions for each of these market channels. The trainings were delivered in conjunction with OSU Extension in Hamilton and Ross Counties, The Minority Business Assistance Center of Cincinnati, Ohio Farm Bureau Ross, Pickaway, Hocking, and Fairfield Counties, and the University of Kentucky's Center for Crop Diversification. An attendee said of the training, "well developed models, knowledgeable presenters." When asked what they liked most about MarketReady, most say the "training was great. Highly recommended."
- Partnered with the OSU Resource and Ag Law Program, Wright & Moore Law, LPP, and Ohio Farm Bureau to host the third annual Ohio AgritourismReady conference at Maize Valley Winery. More than 100 individuals attended the conference and learned how to grow their agritourism enterprises, how to manage liability, best marketing practices, and much more.

See *MARKETING* Page 25



Group picture from the Ohio Farmers Markets Sustainability Planning.

MARKETING from 24

Bill Bakan, Fun Tsar of Maize Valley, a Family Farm Market and Winery creating fun, local and healthy experiences for all, was the host and very well received by those in attendance. Comments included “perfect location, helps to see things in action. Excellent sessions.”

- Held a Sustainability Planning for Ohio Farmers Markets in collaboration with the Ohio Farmers Markets Network, Cornell Cooperative Extension Broome County, and Grow NYC. Thirty-seven Ohio farmers’ markets managers and stakeholders attended the two-day training, which provided information and resources to assist Ohio’s farmers markets in development of a sustainability plan for their markets. One attendee, when asked what they liked best about the training, responded “EVERYTHING! The crisis planning and business management tools contain several items I will definitely apply to my market.”
- Partnered with the CFAES Center for Cooperatives and Ohio Farm Bureau to offer Foodpreneur School. Foodpreneurs engaged with experts in branding, sales, marketing, and more to learn strategies to meet their growth goals. This two-day training was well received and plans are ongoing for Foodpreneur 2.0.
- Partnered with Dr. Abby Snyder, Field Specialist, Food Safety & Management with OSU Extension on a Connect & Collaborate Grant to offer, “Value Added Small Food Processors Training” to 240 small food processors. The project aimed to help attendees understand qualified

exemption status under the Food Safety Modernization Act’s Preventative Controls for Human Food Rule. Of attendees surveyed 85% found the training useful. Christie Welch presented the project and results to OSU Extension ANR Educators at their annual conference.

In addition, team members presented a variety of marketing trainings throughout Ohio including;

- Marketing Programs to Program Development and Evaluation (COMLDR 3330) for Dr. Scott Sheer’s class
- Understanding the Consumer to Ohio Small Farm College attendees
- The Appalachian Table – Where Local Food Producers and Buyers Come Together – poster presentation at OSU Extension Annual Conference
- Marketing Matters – free monthly marketing presentations that are delivered through online streaming and the team’s YouTube channel.

Team members continue to participate in a variety of groups throughout Ohio including, Pike County Local Foods Group, Minority Business Assistance Center, Cincinnati Advisory Board, OPGMA’s educational committee, and the National Farmers’ Markets Working Group.

The team published the factsheet titled Creating Signage for Direct Food and Agricultural Sales, which is available at Ohioline.com

If you would like to be a member of the Direct Food and Agricultural Marketing Team, or would like additional information, please contact Christie Welch, welch.183@osu.edu.

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THE OHIO STATE UNIVERSITY

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