

THE CASE WESTERN RESERVE UNIVERSITY FARM

SQUIRE VALLEEVUE AND VALLEY RIDGE FARMS
2016 ANNUAL REPORT



CASE WESTERN RESERVE
UNIVERSITY EST. 1826



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Summer Students: Cullin Brown and Jonathan Parks

THE CASE WESTERN RESERVE UNIVERSITY FARM, located on Fairmount Boulevard in the Village of Hunting Valley, is a 400-acre property that includes within its boundaries forests, ravines, waterfalls, meadows, ponds, a self-contained natural watershed, seven residences, many other structures, and several miles of roads and trails. The farm came to the university as the result of five gifts: The late Andrew Squire gave 277 acres (Squire Valleevue Farm) in the late 1930s; the heirs of Jephtha Wade II gave Case Western Reserve 104 adjoining acres (Valley Ridge Farm) in 1977; and John and Elizabeth Hollister deeded five acres to Case Western Reserve in 1984 and another five acres in 1995. In 2013, nine acres were added to the property thanks to a generous gift by an anonymous donor.

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In his will Squire wanted the farm to be cultivated and preserved as a farm for educational purposes, and to be a place where the practical duties of life may be taught; where the teachers and students can come in close contact with Mother Earth.

As a condition of the Wade gift, the university officers report annually to the Board of Trustees of the university and to the trustees of the Cleveland Museum of Natural History with respect to the operation of the donated property in 1977.

The farm continues to be a magnificent asset that provides a wide variety of opportunities for education, research, community service and recreation.



Operations and Finances

Earth Day

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Since 2011, Stephen Campbell, vice president for campus planning and facilities management, reports to the Division of Administration regarding the overall management of the farm.

Ana Locci, farm director and adjunct assistant professor in the Department of Biology, manages the farm operations, staff and finances. Locci reports directly to Stephen Campbell. Shane Brown, farm facilities group leader, is responsible for the daily on-site supervision of the farm and reports directly to Locci. Joe Miller and Cullin Brown work with Shane Brown on the

maintenance of buildings and grounds. Patty Gregory is the department coordinator and Manor House program administrator. Sharon Halkovics is the Farm Food Program coordinator.

Other staff members with the expanding Food Program include Alan Alldridge, Matt Burtonshaw and Ian Mungall. Summer students working at the farm were undergraduate student Jonathan Parks to assist the maintenance staff and graduate student Rebecca Pannone to assist the farm administration office.



Onion Planting



Harvest of Hot Peppers



Academic and Research Programs

Greenhouse Planting

4 Academic activities at the farm continue showing a significant increase. The research areas have shown the greatest increase followed by courses and student life activities.

UNDERGRADUATE AND GRADUATE COURSES

Academic programs at the University Farm have greatly expanded during the last sixteen years. In 2016, the farm's indoor and outdoor facilities were used by 24 credit courses at the undergraduate and graduate

levels including courses in the fields of ecology, geology, entomology, herpetology, introduction to biology, engineering, nutrition, nursing, social studies, SAGES classes and visual arts, as well as training courses for the nursing program and language immersion programs. Over 3,000 students and faculty visited the farm to teach or take credit classes.

Undergraduate and graduate courses offered included eighteen lab sections with over 650 students enrolled in the Genes and Evolution (BIOL



Outdoor Painting

214), Principles of Ecology Lab (BIOL 351L/451L), Aquatic Ecology Laboratory (BIOL 339), Ecophysiology of Global Change (BIOL 353/453), Introductory Entomology (BIOL 318L/BIOL 418L), Herpetology Lab (BIOL 305), Public Health Nutrition (NTRN 528), Materials and Society (EMSM 110), the Dorothy Ebersbach Academic Center for Flight Nursing Summer Camp, and several art classes including Raku Ceramic Workshops (ARTS 214/314, ARTS 339 and ARTS 602), and Photography 220.

CONTINUING EDUCATION

The Laura and Alvin Siegal Lifelong Learning Program (LASLL) offered seven continuing education courses year-round during 2016. *The Summer in the Country program* offered five courses: writing poetry, writing creative nonfiction, nature walks, historical gardens, outdoor painting, and two horticulture courses. Each class had between seven and 18 participants resulting in 310 person-visits to the farm during the months of May to July.

During fall the LASLL office offered one class writing creative nonfiction.

The farm administration offered continuing education classes during winter and fall, including beekeeping, growing mushrooms, outdoors painting and nature walks.

RESEARCH

The number of faculty and students actively doing research at the farm continue increasing. Research areas include ecology, environmental studies, engineering and conservation. Projects included graduate, undergraduate capstone and high school senior research. Some of the research projects at the farm are supported by the Ogelbay Trust.

Active research projects onsite include: studies on salamander populations

and movements by Michael Benard, Department of Biology associate professor. Professor Benard's main research study organisms are amphibians.

His research focuses in importance of determining why amphibians are declining and how to stop those declines. Amphibians provide important ecological services and they can also serve as a sensitive indicator of environmental change that might directly harm humans.

Dr. Benard's research lab consists of graduate students Hilary Rollins and Kasey Dananay. Kasey Dananay continues her study on the effect of light on tree frog development stage, which preliminary results have shown how a minimum amount of light such as street light could greatly affect the frog population.



Materials Science Class

Graduate Student, Mike Moore



Jean Burns, Department of Biology associate professor, continues her research program on the mechanisms governing community assembly and biological invasions in plant communities. Dr. Burns' lab consists of graduate students Colin Cope, Andrew Lance, Jennifer Murphey and Anne Osvaldsson. Hathaway Brown student, Lane Chesler, assisted students at the farm summer 2016.

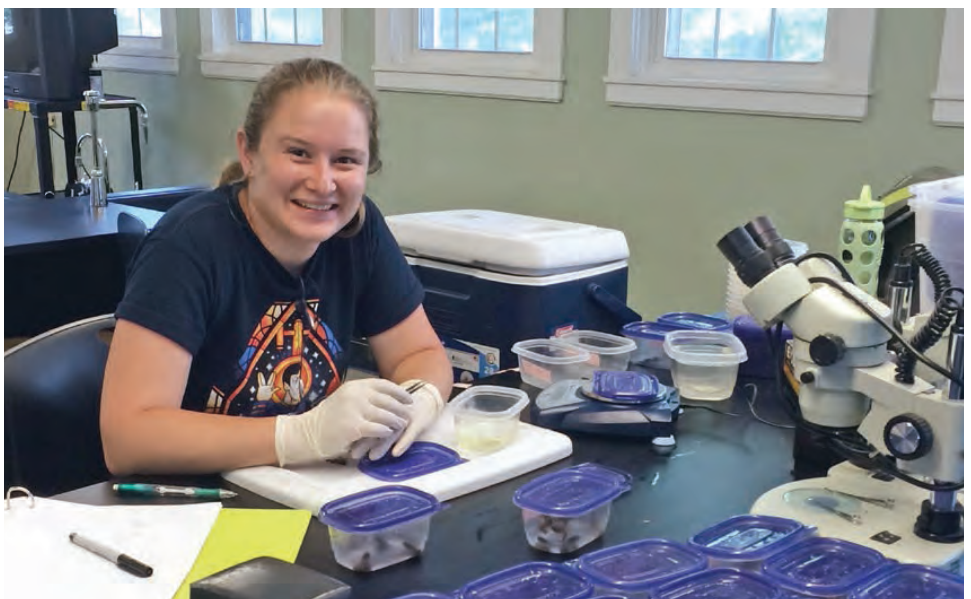
Christopher Cullis, Department of Biology professor, and his graduate students are working at the Debra Ann November Research Greenhouse growing flax plants to study the mechanisms by which DNA within the cell can change rapidly, particularly in response to external stimuli.

Sarah Diamond, Department of Biology assistant professor, continues

her research on understanding and predicting biological responses to novel environments. Through a combination of field and laboratory-based experiments and statistical modeling, Diamond's lab examines how organisms cope with environmental novelty and global change.

Ryan Martin, Department of Biology assistant professor continues his research at the farm during 2016. His PhD student, Michael Moore, is studying the local dragonflies' population metamorphism.

Joseph Koonce, Department of Biology emeritus professor, has continued his efforts to create a high-resolution environmental monitoring network at the farm to improve understanding of the interaction of environment and populations of animal and plant species



Graduate Student, Hilary Rollins

at the scale of the individual organism for research and teaching.

David Burke, assistant scientist at the Holden Arboretum and adjunct assistant professor of the Department of Biology, continues studying phosphorus limitation and soil microbial community composition in hardwood forests of the farm.

Ph.D. student from Ohio University, Maggy Hantak, continues studying the striped/lead polymorphism associated with woodland salamanders in the genus *Plethodon*. The adaptive basis of the color polymorphism remains unclear, however, despite a considerable amount of study no study has yet addressed whether the striped or lead morph of *P. cinereus* is more cryptic to potential predators.

A new research project this year by graduate student Lacy Chick is studying how acorn ant populations have the ability to keep pace with rapid changes in climate. The predictive physiological ecology tries to understand the basis of biotic responses to these environmental challenges by quantifying the contributions of canalization, phenotypic plasticity without genetic change, and evolved plasticity to changes in physiological traits under different environmental conditions.



Holden Arboretum Research



Conservation Programs and Green Initiatives

Compost Program

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The conservation programs continue to expand at the farm. The programs are focused on the expansion of the teaching opportunities while increasing habitat for wildlife and reducing energy consumption.

The natural gas fueled bus acquired by the university to provide transportation to and from campus and farm has been a great success. This service meets the needs for academic, volunteer, and recreational activities. During the 2015-2016 academic year, a total of 203 round trips were provided for

3,802 riders. Transportation served 52 programs including credit courses, volunteer groups, student groups, and special events.

The Farm Food Program (FFP) continues to provide new educational opportunities for faculty and students by studying local food production in a sustainable way using methods consistent with organic farming. During the 2016 spring, summer and fall, labor was provided by farm staff, (Alan Alldridge, Matt Burtonshaw and Sharon Halkovics), four temporary staff



Prairie Burn

(Melissa Kulman, Joanna Richards, Josie Platt and Ian Mungall) and many other students, alum and staff volunteers. Volunteer hours accounted for about five percent of the total labor.

The farm produced over 16,000 lbs. of fresh food for the Case Western Reserve University campus during the 2016 harvest season (over 88,000 lbs. since 2010), either in direct sales to Bon Appetit, sales to the campus community in the form of CSA shares, or sold to Cleveland area restaurants including Trentina,

Sara's Place, Coquette, Greenhouse Tavern and Table 45. The summer CSA supported 133 shares in total, offering a variety of 33 different products. More than 4,000 pounds of produce were distributed among shareholders from June to August. Teaching and research opportunities provided by the FFP in 2016 included visits by SAGES courses, Engineering classes and Public Nutrition classes.

The FFP offered eight seminars for the incoming freshman class at the First-Year Experience in August.

Over 180 First Year students were exposed to various aspects of the food production. The FFP is currently looking at collaboration with CWRU Faculty member Greg Lee on the development of an automated crop seeding robot.

The FFP continues to provide support by growing plants for the on-going research of both Dr. Nicole Steinmetz and Dr. Mark Willis. Support for research by Dr. Chris Cullis and Dr. Jean Burns continues as well. The FFP provided support to two farm-sponsored, day-long symposiums on the topic of beekeeping and pollinators.

Since October 2015, the FFP working with the campus Sustainability Office and Bon Appetit chefs, has been able to compost on average 1,600 gallons of food scraps per month generated from five campus sites, including the pulper

at the Tinkham Veale University Center. The year also brought the addition of a second high-tunnel to the farm, which allowed for more year-round food production and teaching opportunities. In 2016, about 10 percent of all of the food produced came from the two high tunnels on site.

The Eastern Bluebird Trail, in its fifteenth season, includes 50 Peterson houses located around the research ponds and nearby fields. Alumnus Bill Jirousek, University staff member Betsy Banks, and the farm's neighbor Bruce Resnik, all volunteers, along with CWRU undergraduate student Becky Haluska, checked the trail regularly during the breeding season (April - August), recorded data, and banded hatchlings. Many of the farm's Eastern Bluebirds wintered over and the first Bluebird egg was laid on April 20; the last Bluebird

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Sara's Place Delivery



Student volunteers

fledged on August 7. A total of 133 birds fledged (176 in 2015) – 68 Bluebirds (76 in 2015), 42 Tree Swallows (80 2015), and 23 House Wrens (20 2015) – a good year for Eastern Bluebirds and an average one for Tree Swallows.

One Tree Swallow was found that had been banded as an adult in June of 2014 at the farm. The total number of Bluebirds fledged over fifteen seasons is now 700. Trail data, recorded and analyzed at the farm as part of a long-term study, continues to be included in the Holden Arboretum's and Cornell University's (national database) totals.

Spring 2016, our four acre-prairie was burned assisted by the Geauga Metroparks and local fire department. These controlled burns take place every three years to help with the establishment of the native warm weather grasses and wild flowers. The program aims to restore an old pasture area into a native prairie containing several Ohio indigenous

grasses and 20 forbs species. The prairie restoration project is designed to enhance the farm's rich wildlife and serve as a teaching and research tool to complement the farm's academic programs. The project is supported with funds provided by Brian and Cindy Murphy.

FACILITIES UPGRADES

Facilities improvements continue focus on projects to reduce energy consumption and enhance the teaching and research facilities. The second floor of the Main Barn's newly remodeled area received a new heating and AC unit. The main driveway was paved.

The Silo restrooms were painted to preserve the historical buildings. New space was remodel in the Green Barn to accommodate a new teaching space and honey production room. A new utility vehicle was purchased to allow farm staff easier access to trails and other outdoor areas.



Student Life

Farm Harvest Festival

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Student-initiated scheduled use of the farm facilities has increased greatly. Sixty-Four student groups reserved the facilities in 2016. The student reservations included groups using the Pink Pig, November Meeting Center, Manor House, Kutina Classroom, picnic grounds, Green Barn, and Silo Theater. Among the student groups using the facilities were: Alpha Chi Omega, Alpha Phi, Alpha Phi Omega Sorority, Alpha Kappa Psi, Anthropology, Beta Nu of Theta Chi, Biology Graduate students, Bioethics Graduate students, Biomedical Engineering, Campus

Crusade for Christ, Case Alliance Dental Association (CADA), Case Concert Choirs, Case University Singers, Chinese Students and Scholars Association, Chinese Student Christian Fellowship, CWRU Film Society, School of Medicine, Women and Men's Cross Country teams, Track team, Cycling Club, College Scholars Program, Delta Sigma Theta, Delta Upsilon, Delta Psi Omega, Delta Tau Delta, Emerging Leaders Institute (ELP), German Immersion, Graduate Student Senate, Iranian Academic Assoc., Inter Society Council, Inter-Varsity Christian Fellowship,



First Year Student Orientation

International Chinese students, International Student Fellowship, KGSA, Material Science Graduate students, La Alianza, Law School, Master of Public Health (MPH), MGSA, MSASS, Phi Delta Upsilon, Phi Kappa Tau, Phi Gamma Delta, Phi Sigma Rho, Phi Mu Sisterhood, Pi Beta Phi, Nursing School Graduate students, Psi Omega Dental Honorary Society, Residence Hall Association Exec Board, Rich Lab Graduate students, Sigma Phi Epsilon Fraternity, Sigma Psi Sorority, SMDEP, Student Sustainability Council, Tau Beta Pi, Theta Chi Fraternity, Turkish

Student Association, Undergraduate Student Government, Women Engineer students, WSOM-CCI Informatics Division (UG), WSOM OR/SC, WSOM Operations Research MS, WSOM Finance MS.

On August 26, the First Year Student Orientation event took place at University Farm. The event was organized by the University Farm Administration. The First Year Student office assisted with student registration and the office of Sustainability assisted with presenter recruitment and field

activities coordination. The event is intended to raise awareness of environmental issues and highlight the CWRU sustainability initiatives in campus and at the farm through outdoor learning sessions.

The numerous research and educational activities at the University Farm are a perfect way to accomplish these goals. Thirty-three outdoor learning sessions were offered. Presenters talked about different aspects of their own research programs, farm staff highlighted the Food Program topics such as soil, beekeeping, compost, and energy savings. Other faculty members emphasized climate change topics, recycling and sustainability in campus.

Faculty included members from the Departments of Biology, Business, and Physics, the School of Nursing, Engineering and SAGES instructors.

Other guest presenters included graduate and undergraduate students, farm staff and other food production experts talked on growing mushrooms and beekeeping. The event took place from 9:30am to 12:30pm. It is estimated that over 300 freshmen attended the event and 50 orientation leaders.

Students arrived at the farm by 9:30 to a breakfast of fresh fruit, pastries, bagel sandwiches made with farm fresh produce, and beverages. Learning sessions took place from 11am to 12pm. Field activities included lawn games, oversized parachute, trail hiking, soccer, and kickball.

The Sustainability Office donated stainless steel water bottles and cell phone solar chargers to giveaway at the event to those students who signed a sustainability pledge.



First Year Student Orientation



Farm Harvest Festival

On September 17, the seventh annual "Farm Harvest Festival" event took place at Squire Valleevue Farm. The event was co-sponsored by the Case Western Reserve University's Student Sustainability Council (SSC) and the University Farm. The festival was intended to expose students to activities at the farm and raise awareness of the Farm Food Program.

The event guest list included alumni, staff, faculty, graduate and undergraduate students, and their families. The attendance was estimated to be around 1,000. The fundraising effort was headed by SSC's Co-Chairs Cara Fagerholm and Grace Cammarin. Over \$5,000 was raised to support the Festival. SSC also coordinated volunteers from other student organizations.

The council members reached out to the university community by making class announcements, coordinating the volunteer groups, organizing student performance groups, sending emails, posting event fliers and promoting word-of-mouth. During the event SSC members welcomed visitors, and helped

with the many indoor and outdoor activities. Event activities included corn-hole tournament, small animal's petting zoo, cooking demonstration by Bon Appetit chefs, knitting classes, mushroom cultivation demonstrations, research projects, making lip balm and sea salt scrub. The Farm Food Program also hosted a *Try Our Farm Products* event. Other outdoor "hands-on" activities included a tall grass field maze, potting up and taking home herb plants, and a plant identification contest, whose winners received fresh farm grown produce.

Orientations for the School of Medicine, School of Dental Medicine, Anesthesiology & Perioperative Medicine, and Case Western Reserve University's new faculty also took place at the farm's picnic grounds. These orientation picnics introduce the new faculty and professional schools to the farm facilities and its usages.

Several student groups continue to use the farm for special projects as part of their extra curriculum activities. The farm provides unique space and opportunities for outdoor projects.



Facilities Usage

Materials Science Course Farm Tour

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All of the facilities continue to be a popular destination for university classes, department events and meetings, student group meetings and retreats, and outreach programs.

Events hosted at the various facilities range from international conferences and outdoor training programs to small weekend retreats.

The historic facilities are not only excellent venue to host such events, but hold many memories for university alumni.



Community Service

Beachwood School

As part of its strategic plan, the university is committed to encouraging other organizations to use the farm. Area museums, academic institutions, local schools and community service groups are encouraged to use the farm's facilities, property and research areas for academic purposes.

The School Visitation Program is a hands-on program designed to reinforce concepts and field methods in the areas of environmental science, food production and ecology for local middle and high school students.

During the academic year 2015-2016, the farm hosted local school visits with over 1,300 student-visits, 15 teachers and 25 chaperones. The schools participating were Shaker Hts. Middle School, Hathaway Brown, and Beachwood.

During the academic year 2015-2016, Beachwood Schools offered the "Outward Boundless Bryden Elementary Program", a new after-school club that comes to the farm each week with groups of students in Kindergarten and 1st Grade. During

their visits they explored and played in the natural world. Beachwood Bryden Elementary students were able to hike in the creeks, roll in the grass, climb in the trees, play in the snow, and slish through the mud - rain or shine. Led by Beachwood staff members Wendi Bomback and Jason Downey, the kids had the freedom to play creatively, navigate terrain, be social and challenge themselves physically. The students love the opportunity, which has given them direct access to a natural environment in which to study, learn and play. The program is continuing and expanding for the 2016-2017 academic year to include 2nd and 3rd graders.

Hathaway Brown School and Case Western Reserve University continued their collaboration and usage of the farm facilities. During the academic

year 2015-2016, 27 events were hosted at the farm facilities bringing more than 800 students, staff and guests to the farm. Their use of the farm facilities included the November Meeting Center, Pink Pig, Kutina Classroom, Manor House and picnic grounds. Visits included environmental programs for second, fourth and fifth graders, 11th and 12th-grade AP biology class field trips, middle school aquatic education, writing camps, week-long student retreats, EC student hikes and picnics, faculty and staff professional meetings, and social events.

Other local academic institutions that visited the Farm Food Program facilities included: John Carroll University, University of Akron, Hiram College, and Lorain Community College.



Orientation Leaders



Grants and Gifts

High Tunnel Food Production

A Farm Annual Fund to raise funds to support new farm initiatives and programs was initiated in 2005. By means of this fund, individuals can now contribute directly to the farm during the university's annual fund drive. To date, \$33,000 has been raised thanks to the generosity of farm friends and neighbors. This fund is already being used for new initiatives such as trails brochures, green initiatives and support for the Farm Visitation Program.

Two new benches were generously donated to the farm in 2016. There have

been a total of 32 benches donated to the farm by families of alumni, faculty and staff. This program helps to improve the farm's outdoors while providing a new funding source to update the facilities.

Other generous donors for the Farm Food Program included the Ivy Garth Seed Company for their continued donation of seeds, Bon Appetit Management Company for their generous food donations for the Harvest Festival.



Thanks for Your Generous Support to the Farm

High Tunnel Tour

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Your continuous support has allowed us to develop new academic programs and to update our teaching and research facilities. Thanks again for your generosity.

Your philanthropy for the farm can be expressed in several ways including:

Farm Annual Fund: Gifts received in any amount to provide unrestricted income to develop new academic and conservation initiatives, as well as small facilities improvements.

Farm Bench Dedication Program: A \$2,000 bench donation would help to update our art teaching facilities and to improve our outdoor areas at the farm. For more information, please go to: studentaffairs.case.edu/farm/support/bench.html

University Farm Endowment: This fund was established in 2007 to help improve and maintain the property with more than 20 structures and 400 acres of green space. Many of the farm buildings are over 100 years old and



Summer Help, Ian Mungall

require extensive upkeep to preserve their rich history.

Planned Giving: A planned gift to the farm would provide a benefit to you and your family by bringing immediate and deferred tax advantages to both you and your heirs.

Memorial Tree Donation: A \$1,200 donation will plant a lasting memorial at the farm. Gift includes the cost of a tree and memorial plaque. Funds for this program also help to support Farm

Food Program initiatives and School Visitation Program.

If you would like to contribute or have questions about any of these opportunities, please contact us at 216.368.0274 or visit our website and Facebook pages.



Wild Mushrooms

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FARM MANAGEMENT

Stephen M. Campbell

Vice-President for Campus Planning
and Facilities Management

FARM STAFF

Ana B. Locci

Director and Department of Biology
Adjunct Assistant Professor

Patty Gregory

Department Coordinator

Sharon Halkovics

Farm Food Program Coordinator

Alan Alldridge

Farm Associate 2

Matt Burtonshaw

Farm Associate 2

Ian Mungall

Farm Associate

Shane Brown

Facilities Group Leader

Joe Miller

Facilities Crew Assistant

Cullin Brown

Facilities Crew Assistant



Dr. Ken Kutina and Dr. Ana Locci, Farm Director

In July 2016, the farm lost a mentor and dear friend, Dr. Kenneth L. Kutina. He was a triple CWRU alumnus, a retired administrator and emeritus professor. He helped the farm to secure numerous grants for renewable energy projects, and in obtaining several endowment gifts to be used for projects to update and remodel historical buildings. He was our quiet and gentle leader. His presence at the farm is greatly missed.

**Squire Valleevue and
Valley Ridge Farms**
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students.case.edu/farm