

University Farm
Squire Valleevue and Valley Ridge Farms

Annual Report 2011

"...in
close
contact
with Mother
Earth."



CASE WESTERN RESERVE
UNIVERSITY EST. 1826

think beyond the possible



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THE CASE WESTERN RESERVE UNIVERSITY FARM, located on Fairmount Boulevard in the Village of Hunting Valley, is a 389-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 four gifts. The late Andrew Squire gave 275 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.

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In his will Squire wanted the farm to be cultivated and preserved for educational purposes, and to be a place where 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 during the prior year.

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



Operations and Finances

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The Farm Management Committee meets on a regular basis and provides policy and long-range planning advice and guidance. The committee's focus continues to be identifying improvements that can be implemented at the farm within the constraints of the available budget and personnel that will maximize its positive impact on the university's strategic priorities. The new chair of the Farm Management Committee, **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. She provides leadership in cooperation with the Farm Management Committee to expand the utilization of the farm's resources in accordance with the strategic plans of the university. Her essential functions include:

- Develop and maintain liaisons with the academic, athletic and student leadership of the university to maximize benefits of the farm's unique resources relative to the university's mission.



Farm staff member Alan Alldridge harvests peppers at the Valley Ridge Farm vegetable gardens.



Student volunteers ³ paint grape arbors at the Wade Historical Gardens at Valley Ridge Farm.



- Facilitate the development of education and research programs by working with appropriate faculty, department chairs and deans to catalyze expanded academic use of the farm.
- Prepare a five-year operating and capital financial plan, plus annual budgets, and assure that income and expenses are monitored to achieve balanced budgets.
- In concert with the Farm Management Committee and appropriate university officers, seek out sources to acquire new funding for the farm in the form of gifts and grants, and prepare necessary grant applications and presentations.
- Supervise a full-time staff of five, and two part-time employees.
- Prepare an annual report on farm operations, plans and finances for the Farm Management Committee and the trustees of the university.
- Manage liaisons with neighbors and the Village of Hunting Valley officials to maintain constructive and mutually beneficial relationships.

Locci reports to **Stephen Campbell** and the Farm Management Committee. **Mark McGee**, farm foreman, is responsible for the daily on-site supervision of the farm and reports directly to Locci. **Patty Gregory** is the department assistant and Manor House program administrator. **Christopher Bond** is the farm horticulturist and Farm Food Program coordinator. Three new part-time staff were hired to accommodate the increasing number of programs: **Zoey Bond**, Manor House event coordinator; **Meaghan Wierzbic**, student fellow with the Farm Food Program; and **Shane Brown**, utility worker.



Academic and Research Programs

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Academic and research programs at the university farm have greatly expanded during the last year. In 2011, the farm's indoor and outdoor facilities supported 20 courses at the undergraduate and graduate levels including courses in the fields of ecology, engineering, entomology, geology, herpetology, nursing, nutrition, three SAGES classes and visual arts, as well as training courses for the nursing program and language immersion programs. More than 2,000 students and faculty visited the farm to take credit classes. The approved transportation fund designated for all students and faculty taking credit-courses has been key in expanding the academic

activities. The greatest increase in academic activities was due to on-site research projects and participation in the Farm Food Program. The number of faculty and students actively doing research at the farm in the areas of ecology, environmental studies, engineering, conservation and nutrition increased from 40 to 60. Projects included graduate and undergraduate research, senior and capstone projects.

UNDERGRADUATE AND GRADUATE COURSES

Twenty-four lab sections with more than 600 students enrolled in the Genes and Evolution (BIOL 214) course came to the



Deborah Harris, Department of Biology instructor, with her Biology 214 students at the Flora Stone Mather Teaching Lab.

farm for their biodiversity lab during April and September with course instructor **Deborah Harris**. Each section with 24 students came for a two-week period. During their lab sections, they collected insects from the fields and analyzed the diversity and species richness in various microhabitats within the maple-beech forest.

Two lab sections with 12 students enrolled in the summer session of BIOL 216L came to the farm with their instructor **Barbara Kuemerle** to study tree diversity and species richness in various sites within the maple-beech forest.

Jean Burns, assistant professor in the Department of Biology, offered Principles of Ecology Lab (BIOL 351L/451L) during the fall semester. Seventeen undergraduate students and one graduate student were enrolled. The course focused on spatial and temporal relationships involving organisms and the environment at individual, population and community levels. An underlying theme was Darwinian evolution through natural selection with an emphasis on organism adaptations to biotic and abiotic environments. Case studies and models illustrated ecological principles on their applicability to ecosystem conservation. The laboratory portion



Biology 214 teaching assistants prepare lab material at the Flora Stone Mather Teaching Lab.

to seven undergraduate biology majors. The course investigated the physical, chemical and biological limnology of freshwater ecosystems. Emphasis was placed on the identification of the organisms inhabiting these systems and their ecological interactions. This course combined both field and laboratory analyses to characterize and compare the major components of the research ponds at the farm.

Mark Willis, Department of Biology assistant professor, offered

Introductory Entomology (BIOL 318L/418L) during the fall semester. The class of 17 students came five times to the farm for their insect collection during the months of August and September. Class meetings alternated with some structured lectures and laboratory exercises. Students were required to make a small but comprehensive insect collection. Early in the semester, they focused on collecting the insects, and later, when insects were gone for the winter, they worked to identify the specimens collected.

For two weeks, June 13-17 and June 20-24, nine Case Western Reserve students took a course in Raku ceramics. Four students from ARTS 399 and five students from ARTS 497 enrolled in the graduate art education program, taught by instructor **Tim Shuckerow**, art education and art studio director. The classes used the ceramic studio at Valley Ridge Farm.

The Art Studio Program offered Introduction to Photography Studio I (ARTS 220). Instructor **Alexander Aitken** visited the

of the class complemented the lecture material and involved hypotheses-driven investigations in field and greenhouse settings at the farm.

Michael Benard, Department of Biology assistant professor, offered a herpetology class (BIOL 305) at the farm during fall 2011. Class activities included quantitative sampling of ponds to test for ecological differences between bullfrog and green frog tadpoles. Salamander home range was estimated by capturing stream-dwelling salamanders (either dusky salamanders or two-lined salamanders), marking them with Visible Implant Elastomer and releasing them. The marked salamanders were recaptured at a later date to estimate movement rate. The same lab activities are conducted in multiple years, allowing students to compare their data with previous years' data.

During the fall semester, **James Bader**, Department of Biology lecturer, taught the Aquatic Ecology Laboratory (BIOL 339)

farm on July 11 with five students who took photographs for their assigned projects. During the course assignment, students worked on the transfiguration of the common space, personification and multiple figure-ground relationships.

In spring and fall, **Martha Lois**, art studio/ art education lecturer, held one-day Raku ceramic sessions for 58 students in her ceramics courses (ARTS 214/314) at Valley Ridge Farm. The sessions focused on hand building techniques and the development of sensitivity to design and form. Farm transportation funds were used to provide student transportation.

The National Flight Nursing Academy at Case Western Reserve held its ninth annual summer camp at the farm Aug. 1-5, 2011. Open to nurses, physicians, pilots, firefighters and paramedics, the camp—the only one of its kind in the country—provides training exercises to prepare teams for treating critical patients in unstructured environments, such as those following natural disasters. The week long, 40-hour, hands-on training course included mass casualty scene response; pediatric trauma and obstetric emergencies; advanced airway and extrication; chest tube and central line placement and suturing labs using high-tech simulated patients; hazardous materials response; flight safety; preparing landing zones and helicopter simulation. This year's casualty response drill was held at the farm on Friday, Aug. 5

with more than 60 volunteers and staff participating. Students were able to use their advanced clinical decision-making skills as they attended to the victims of a multi-vehicle accident and performed a rescue drill by the farm wooded areas.

Two master students from the School of Medicine Department of Nutrition, **Andrea Singer** and **Kristen Webb**, carried out a research project as part of their Investigative Methods in Nutrition (NTRN 561) course. They studied the effect of one-time, garden-based nutrition intervention on elementary-aged students' nutrition knowledge from three local elementary schools.

Twelve students from public health nutrition course (NTRN 550), visited the



Master's Art Studio student works at the Valley Ridge Farm Ceramic Studio.



Eric Hamilton, undergraduate senior, and professor Joseph Koonce work on the soil nutrient study at the Valley Ridge Farm vegetable gardens.

walking through nature, and birds and breakfast. Each class had between nine and 20 participants resulting in 694 person-visits to the farm during the months of May to July. The majority of the classes met twice a week at the Pink Pig or Kutina Classroom facilities. The outdoor painting class met at the Sheep Barn and used both Squire Valleevue and Valley Ridge Farms for their sessions.

farm to learn about food production using organic methods.

Four BSN senior students, **Emily Jasina, Jessica Nuhfer, Erica Pizzolato** and **Evalyn Zimpelmann** carried out part of their capstone project at the farm. They visited the facilities three times with fifth grade students from the Michael R. White School to learn about the science behind growing organic food and basic nutrition.

As an integral part of studying foreign languages at Case Western Reserve, many courses are required to participate in a weekend immersion retreat at the Pink Pig. While they hike the trails, cook, converse, and play sports and games, they use the language they are studying. Participating this year were students enrolled in German and Spanish classes.

CONTINUING EDUCATION

Summer in the Country, a program sponsored by the College of Arts and Sciences Office of Continuing Education, offered seven courses: painting in the outdoors, writing poetry, journal writing, university farm history, writing nonfiction,

The Autumn in the Country program offered seven classes for continuing education, including writing nonfiction, painting in the outdoors, foraging food, university farm history, meet our local farmers, conversational French and walking through nature. Fifty-seven participants took the courses with 331 person-visits to the farm.

RESEARCH

During early spring, **Michael Benard** and lab research assistant **Matt Kluber** investigated how wood frogs adapt to changing environments. Through the summer and early fall, additional members of Benard's lab (doctoral student **Kathy Krynak** and undergraduate students **Brittany Bogus** and **Jeremy Rayl**) conducted research to investigate how anthropogenic wetland acidification interacts with natural stressors to affect amphibian immune defense. These studies took place at a protected area at the farm where an experimental array of 100 artificial ponds are set up. Artificial ponds allowed Benard and members of his lab to experimentally manipulate specific characteristics of natural ponds while holding other environmental characteristics constant. The data gathered from these

Remote monitoring system for soil temperature and moisture at the Valley Ridge Farm vegetable gardens

experiments were incorporated into population models to predict how changes in environmental conditions like reduced genetic diversity and increased predation risk affect overall population extinction risk. The laboratory facilities at the farm provide an important place for Benard and his colleagues to sort, measure and preserve samples taken from the artificial ponds. The farm also provides another benefit to Benard's research: the wooded areas and vernal pond on the property are home to a population of wood frogs. By taking data on the number of wood frogs living on site and comparing it to similar population-size estimates from other sites in Ohio, Benard is able to test the predictions generated by his artificial pond and modeling studies.

Jean Burns, continued her field work research at the farm with plant invasive species. Her experimental gardens are located at Valley Ridge Farm. The research in Burns' lab focuses on the mechanisms driving biological invasions and governing community assembly. During summer, her post doc **Angela Brandt** and three undergraduate students—SPUR scholar **Conor Leahy** and research assistants **Lauren Huffman** and **Nicole Zimmerman**—carried out field experiments at the Debra Ann November Research Greenhouse and at the Valley Ridge Farm experimental gardens. Brandt's research at the farm has focused on the role of environmental heterogeneity in governing invasibility. Conor Leahy's SPUR project focused on the role of soil feedbacks on competition and invasibility.

Ana Locci and **Eric Hamilton**, SPURS scholar, studied the effect of several





types of fertilizers on two products of the Farm Food Program. The study consisted of analysis and quantification of growth parameters and production for tomatoes and zucchini plants using compost, inorganic and organic fertilizers.

Christopher Cullis, Department of Biology professor and chair, 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. The model systems, all plant based, that are the basis for these investigations are the heritable mutations in flax in response to the external environment and the appearance of somaclonal mutations after plants have been taken through a cycle of tissue culture and regeneration. Flax has been shown to be especially prone to genomic destabilization by the external

growing environment. Cullis and his students are interested in developing a flax genome project to elucidate these global genomic changes.

Joseph Koonce, Department of Biology professor, has continued his efforts to create a high-resolution environmental monitoring network at the farm. The goal is to improve understanding of the interaction of environment and populations of animal and plant species at the scale of the individual organism for research and teaching. Ultimately, advancing understanding will require high-resolution (spatial and temporal) monitoring of key environmental drivers (temperature, relative humidity, light, etc.) and ability to track animal movements. This year Koonce added an additional water level data logger to Squire Pond and installed wireless soil moisture and soil temperature sensors at the lower and upper farms. The water level



Instructor Barbara Kuemerle and Biology 216 students on the farm trails.

sensor at the new outlet weir of Squire Pond along with the water level data loggers in the Salamander vernal pond and drainage creek for the north woodlot and research pond watersheds provide the infrastructure to monitor runoff and watershed hydrology at the farm.

The new wireless sensor nodes provide a complement to the fixed weather stations. The locations and sampling resolution are sufficiently flexible that research projects can alter sampling locations according to the scale of data sampling required to test hypotheses or to obtain critically needed information. The wireless sensor networks at the lower and upper areas of the farm are currently providing data to understand fine scale variability of soil moisture and temperature regimes in the food production program. The data produced by the remote weather stations, water level data loggers and wireless sensor networks have required

creation of data management plans and data accessing and archiving protocols. Koonce and his colleagues have created a web portal for sharing these data, and the data sets are being actively used in undergraduate independent study projects and courses.

David Burke and **Kurt Smemo**, assistant scientists at the Holden Arboretum and adjunct assistant professors of the Department of Biology, continue studying phosphorus limitation and soil microbial community composition in hardwood forests of the farm. In 2009, they established 72 experimental plots throughout northern and southern Ohio, divided into six blocks consisting of 12 plots each. Two blocks (24 plots) were established at the farm property within the mature oak-maple forest along Cedar Road. The study is being funded by a National Science Foundation grant.

Ronald Oldfield, Department of Biology lecturer, and his undergraduate student **Rebecca Hagan** are doing an inventory of the aquatic animal community in the stream at Squire Valleevue Farm. This small headwater tributary of the Chagrin River runs from west to east almost entirely within the farm's borders. Even though this stream is a valuable protected environment, the aquatic animal community inhabiting the stream is completely undocumented. This inventory of the stream's fish, amphibian and macroinvertebrate species will help to determine what species are benefitting from the farm's protection. In addition, the ecological characteristics of each species are analyzed and compared to their geographical distributions within the stream in order to assess how they colonized the stream. More stream-adapted species have been found at downstream sites close to the Chagrin River, suggesting that these species had naturally colonized upstream from the River. Several pond-adapted species (bluegill sunfish, *Lepomis macrochirus*, largemouth bass, *Micropterus salmoides*, yellow bullhead catfish, *Ameiurus natalis*)

not native to the stream have been found at upstream sites that would be unreachable through natural colonization due to the presence of impassible waterfalls. The geographical distribution of these species within the stream indicates that at most two of them may be colonizing from artificial ponds located on farm property, but at least two of the three species are colonizing from a source located upstream of farm property. The non-native pond-adapted species are relatively large, predatory species, and their effects on the rich amphibian community observed in the stream remain unknown.

Denny Fernandez and **Emmanuel Santa** from the University of Puerto Rico studied the effect of native and introduced cover crops on several of the garden areas of the farm. Santa, a senior undergraduate student at the University of Puerto Rico Humacao campus, visited Cleveland for six weeks as part of his undergraduate research as SPURS scholar.

Ohio State University master's student and Case Western Reserve alumna **Caitlin**



Emmanuel Santa, undergraduate student at the University of Puerto Rico and SPUR fellow, during his summer internship at the farm.



Birds and Breakfast Summer in the Country class with course instructor Tim Matson, curator at the Cleveland Museum of Natural History, at the Valley Ridge Farm.

Burkman (CWR '10) studied the farm grassland spider population during the summer. This research will measure the composition and formation of spider communities, and their role as natural enemies.

During the month of May, **Carl Anthony**, graduate coordinator of the Department of Biology at John Carroll University and his student, **Kimberly Thompson**, visited the farm several times to study predation rates by birds on salamander species using clay models. Anthony's research area is on behavioral traits of local salamander species, including predation avoidance on natural settings.

The Cleveland Botanical Gardens used the Debra Ann November Research Greenhouse to grow plant material for the Green Corp program from March to June 2011.

Kenneth Kutina, vice president emeritus for Institutional Planning, uses one of the Main Barn faculty offices. Kutina was Farm Management Committee chair for 11 years and continues providing support and advice to the farm administration, including grant writing and assistance with several

sustainability initiatives. Kutina continues to be a key participant in the development of green farm campus initiatives, including the feasibility study and permit process to install a wind turbine and solar panel array.

Steven Hauck, II is using one of the farm faculty offices during his fall 2011 sabbatical. He is an associate professor in the Case Western Reserve Department of Geological Sciences and teaches a couple of courses at the farm during the academic year.

More than 100 tobacco and *Datura* plants are being supplied by the farm greenhouse for **Mark Willis'** lab. A neurobiologist who studies the flight patterns of moths, Willis uses the plants for female moths to lay their eggs to maintain their moth colony.



Conservation Programs and Green Initiatives

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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.

In 2010, the farm administration created a program to provide new teaching and learning opportunities in the area of local food while supplying fresh food to the campus dining halls. The goals of this initiative are to provide new educational opportunities to faculty and students to study local food production in a sustainable way using mostly organic methods, and to deliver fresh food and herbs to the main

campus. **Chris Bond**, farm horticulturist, worked to design this pilot project to start food production in February 2010. Bond was assisted by farm staff member **Alan Alldridge** and student fellow **Meaghan Wierzbic**. During the spring, summer and fall of 2011, labor was provided by farm staff, student volunteers and several undergraduate students: **Jillian Johnston**, **Kayla DeVault**, **Kenny Kiesel**, **Raia Contractor**, and **Angela Kaczowka**. Student volunteer hours accounted for almost 25 percent of the total labor. During the fall semester, **Rachel Wagner** also worked with the food program. The farm delivered more than 7,500 pounds of fresh food to the



Freshman class of 2014 volunteers at the Farm Food Program Valley Ridge Farm gardens

campus dining halls and donated more than 800 pounds to the Cleveland Food Bank and other local food pantries. Teaching opportunities included visits by four SAGES courses, four student research projects pertaining to soil, cover crops and nutrition education, and several local college and high schools field trips.

During spring and summer 2011, 17 wildflowers and grasses were observed in the prairie restoration area. No prescribed burning was done in 2011. Species include *Bouteloua curtipendula* (Side-oats Grama), *Elymus canadensis* (Nodding Wild Rye), *Sorghastrum nutans*

(Indian Grass), *Andropogon gerardii* (Big Bluestem), *Echinacea purpurea* (Purple Coneflower), *Heliopsis helianthoides* (Ox Eye Sunflower), *Ratibida pinnata* (Grey-Headed Coneflower), *Aster novae-angliae* (New England Aster), *Coreopsis tripteris* (Tall Coreopsis), *Monarda fistulosa* (Wild Bergamot), *Silphium trifoliatum* (Whorled Rosinweed), *Verbena hastata* (Blue Vervain), *Helianthus grosseserratus* (Sawtooth Sunflower), *Lespedeza capitata* (Roundheaded Bushclover), *Rudbeckia subtomentosa* (Sweet Black-eyed Susan), *Rudbeckia triloba* (Brown-eyed Susan), *Rudbeckia hirta* (Black-eyed Susan), and *Lobelia siphilitica* (Great Lobelia). One of

the most noticeable vegetation changes after the prescribed burn of 2010 was observed during the month of September with a high density of Big Bluestem grasses dominating the prairie area. The project is a collaboration with the Cleveland Museum of Natural History and the Ohio Prairie Nursery Ltd. The program aims to restore four acres of old pasture area into a native prairie containing several Ohio indigenous grasses and 20 forbs species. The prairie restoration is enhancing the farm's rich wildlife, and becoming another teaching and research tool to complement our expanding academic programs. The prairie site also serves as an educational tool for farm visitors. The project was supported with funds provided by alumni and farm neighbors, **Brian and Cindy Murphy**.

The Bluebird Trail, now in its ninth season, includes 58 Peterson houses located

around the research ponds and nearby fields. Alumnus **Bill Jirousek** (SAS '01) and university staff member **Betsy Banks**, both farm volunteers, checked the houses regularly during the breeding season (April - September), recorded data, and banded hatchlings. Many of the farm's bluebirds wintered over, and the first bluebird egg was laid on April 21. The last bluebird fledged on Aug. 1. A total of 141 birds fledged (158 in 2010) – 60 eastern bluebirds (75 in 2010), 58 tree swallows (47 in 2010) and 25 house wrens (36 in 2010)—third best record year for eastern bluebirds and tree swallows. 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.

Members of the Cleveland Museum of Natural History under the direction of **Jeff Day**, junior



Tiger butterfly by the farm prairie area

Summer students and farm staff with some of the harvested produce from the Farm Food Program

medical camp coordinator and health educator, came to the farm for their traditional Christmas bird count on Dec. 17, 2010. They counted 28 species and a total of 230 individual birds, including Canada goose, cooper's hawk, red-shouldered hawk, red-tailed hawk, mourning dove, red-bellied woodpecker, downy woodpecker, hairy woodpecker, pileated woodpecker, northern shrike, blue jay, American crow, black-capped chickadee, tufted titmouse, white-breasted nuthatch, Carolina wren, eastern bluebird, American robin, European starling, cedar waxwing, American tree sparrow, fox sparrow, white-throated sparrow, dark eyed junco, northern cardinal, house finch, American goldfinch, house sparrow and northern shrike.

Jeff Day also visited the farm with the Cleveland Museum of Natural History Pre-Medical Camp participants on June 17 and June 24, 2011.

In September 2011, the farm earned the *Crain's* Emerald Award for outstanding sustainability program for a nonprofit organization with less than \$1 million per year in annual revenue. This award recognizes outstanding Northeast Ohio companies, organizations and leaders that have successfully implemented and benefited from sustainable initiatives. Honorees were profiled in the Sept. 5 issue of *Crain's Cleveland Business* and presented with an award at a Sept. 20 reception at Cleveland State University.





Student Life

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Student-initiated scheduled use of the farm facilities has increased greatly. Seventy-four student groups reserved the facilities in 2011. The student reservations included groups using the Pink Pig, Sheep Barn, Manor House, Kutina Classroom and picnic areas. Among the student groups using the facilities were:

Academic Integrity Board
Aikido Club
Alpha Chi Omega
Alpha Phi
Alpha Phi Omega Sorority
Alpha Kappa Psi
Anthropology Students

ASHA Indian Students Association
American Medical Student Association
Beta Nu of Theta Chi
Biology graduate students
Bioethics graduate students
Biomedical Engineering Graduate Student Association
Campus Crusade for Christ
Case Baja SAE
Case Alliance Dental Association (CADA)
Case Amateur Radio Club (W8EDU)
Case Campus Girl Scouts
Chi Alpha Christian Fellowship
Chinese Students and Scholars Association
Chinese Student Fellowship
CSR/School of Medicine



Undergraduate students attending the second Annual Farm Harvest Festival

CWRU Fellowship of Christian Athletes
 CWRU Film Society
 CWRU Go Club
 CWRU School of Medicine Student Groups
 CWRU Women's Soccer Team
 CWRU Archery Club
 CWRU Women and Men's Cross Country
 teams
 CWRU Track team
 Catalyst Social Interest Group
 CWRU Cycling Club
 College Scholars Program
 Debate Team
 Delta Chi
 Delta Sigma Theta
 Delta Upsilon Fraternity

Delta Psi Omega
 ECHE graduate students
 Electrochemical Society, Case Western
 Reserve Student Chapter
 Engineers Without Borders
 German Students Immersion
 Graduate Student Senate
 Institute of Electrical and Electronic
 Engineers, Case Western Reserve
 Student Chapter
 Intersociety Council Group
 InterVarsity Christian Fellowship
 InterVarsity Graduate Christian Fellowship
 International Student Fellowship
 Korean Graduate Students Association
 Kappa Alpha Theta Sisterhood



Students at the second annual Farm Harvest Festival learn about the fresh food produce at the farm.

Lambda Chi Alpha Fraternity
 Materials Science Graduate Students
 Muslim Students Association
 Newman Catholic Students Association
 Phi Kappa Tau
 Phi Gamma Delta
 Phi Sigma Rho
 Phi Mu
 Psi Omega Dental Honorary Society
 Residence Hall Association
 Second Year Institute
 Sigma Phi Epsilon Fraternity
 Sigma Psi Sorority
 Solstice Women's A Cappella
 Spanish Student Immersion
 Student Turning Point Society
 (Weatherhead School of Management)
 Student Bar Association
 Tau Beta Pi
 Theta Chi Fraternity
 Turkish Student Association (UTurk)
 Undergraduate Student Government
 University Program Board
 UPCaM
 Zeta Beta Tau Fraternity

Valleevue Farm. The event was co-sponsored by the Case Western Reserve 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, graduate and undergraduate students and their families. The attendance was estimated to be around 415 with approximately 294 undergraduate and 30 graduate students, and 90 staff, faculty, alumni and guests. SSC members made an excellent effort to reach out to all friends of the university by making class announcements, creating a website, sending emails, posting event fliers and promoting word-of-mouth. **Eric Hamilton**, a senior and SSC member who has volunteered at the farm since last spring, was the SSC student leader of this event and led the fund raising efforts. Twelve SSC members welcomed visitors, parked cars, served food and helped with the many indoor and outdoor activities.

On Oct. 1, 2011, the second annual Farm Harvest Festival took place at Squire

Event activities included decorating cookies, a cooking demonstration by

Bon Appétit chefs **Joe Gentile** and **Kurt Siedel**, beekeeping and honey production exhibitions, a wool spinning demonstration, sales of the farm history book, a Farm Harvest Festival memory basket, and informational booths staffed by 1-2-1 Fitness and Spruceberry Farms. Several outdoor hands-on activities planned by farm horticulturist **Chris Bond**, assisted by undergraduate students **Rachael Wagner**, **Kayla DeVault**, **Evan Martin**, **Raia Contractor**, **Angela Kaczowka** and **Camerin Bennett**, included a tall grass field maze, crop maintenance tasks in the greenhouse, tours of the Farm Food Program facilities and operations, potting up and taking home herb plants, and a plant identification contest, whose winners received a basket of fresh produce, grown on the farm.

Orientations for the School of Medicine, School of Dental Medicine and new university faculty also took place at the farm.

During 2011, several student groups used the farm for special projects as part of their extra curriculum activities. The farm provides unique space and opportunities for outdoor projects.

Case Western Reserve's chapter of Engineers Without Borders continued conducting its water project at the farm both to act as a test bed for current and future international projects and to improve the farm's community gardens' irrigation system. Engineers Without Borders is a humanitarian student organization committed to partnering with developing communities in order to improve quality of life. This partnership involves the implementation of sustainable engineering

projects by internationally responsible engineering students collaborating with professional engineers. The Case Western Reserve chapter consists of undergraduate students, faculty and professional advisors. The rainwater collection system is designed to use the roof of the honey house in order to supply the nearby garden plots with water. Construction of the collection system involves modification of the drainage gutters and offshoots. The project consists of the design and construction of two ferrocement water tanks and the installation of a small vertical windmill to pump the water. The irrigation system will offer gardeners the option of a drip irrigation system. Both water holding tanks are designed and constructed of appropriate size for their use and will have drainage systems for excess water in order to prevent erosion and damage to the tanks and surrounding structures in the event of extreme rainfall or periods of non-use. This project is promoted as a sustainable approach to water sourcing in both the local and the university communities.

The Case Alumni Association (CAA) hosted its second annual Day at the Farm picnic open house on Saturday, July 30, 2011. The event brought 80 alumni and their families to the farm, and included hiking along the beautiful wooded trails, a walk through the Debra Ann November Research Greenhouse to learn about the Farm Food Program, tours of farm historical buildings and teaching facilities, a hayride provided by farm staff, and games and activities for the whole family.



Facilities Usage

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All of the facilities continue to be a popular destination for classes, university department events and meetings, student group meetings and retreats, and outreach programs. Events hosted at the various facilities range from international conferences and training programs to small weekend retreats. The historic facilities are not only excellent for retreats but hold many memories for university alumni. Many of the facilities are known by name: the Sheep Barn; Pink Pig, the rustic cottage; several picnic areas; the Main Barn and Kutina Classroom; and Andrew Squire's own country estate, the Manor House. **Patty**

Gregory oversees the reservation process for all the farm facilities.

During the year, 134 groups booked the various picnic areas, generating 7,615 person-visits. Of these specific groups, 14 percent were student events, 33 percent were university departments, 40 percent were university-affiliated private events, and 14 percent were nonprofit groups.

The Sheep Barn hosted 87 groups, generating 5,390 person-visits. Groups using the Sheep Barn constituted 26 percent student events, 61 percent university academic meetings and retreats,



Angela Kaczowka, summer student, harvesting fresh herbs at the Debra Ann November Research Greenhouse

20 percent university social events, and 8 percent nonprofit groups.

The Pink Pig accommodated 110 groups, generating 2,071 person-visits.

The Kutina Classroom provided space for 73 groups generating 1,045 person-visits. The classroom is equipped with audio/visual equipment and can accommodate up to 25 users per visit.

The Manor House provides a special venue for meetings and reached a wide audience this year. A new event coordinator, **Zoey Bond**, was hired in April 2011. The facility

hosted 52 events comprised of 33 university departments, four student groups, seven nonprofit groups, and 10 university-affiliated private events. The Manor House also serves the Cleveland community's non profit and corporate groups hosting board meetings and training programs. Some of the nonprofit groups using the house included the Western Reserve Land Conservancy, Cleveland Museum of Natural History and Audubon Society.



Community Service

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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 2010-2011, the farm hosted the highest number of school visits

since the implementation of the program. Eighteen school visits brought 505 students, 38 teachers and 34 chaperones to the farm. The schools participating were Shaker Heights Middle School, Padua Franciscan High School, Charles F. Brush High School, Beaumont School, Ruffing Montessori, Marion Sterling Elementary, Hathaway Brown and Lutheran East High School, and Michael R. White School.

Hathaway Brown School and Case Western Reserve continued their collaboration and usage of the farm facilities. During the academic year 2010-2011, the usage of farm facilities exceeded 1,180 students and staff.



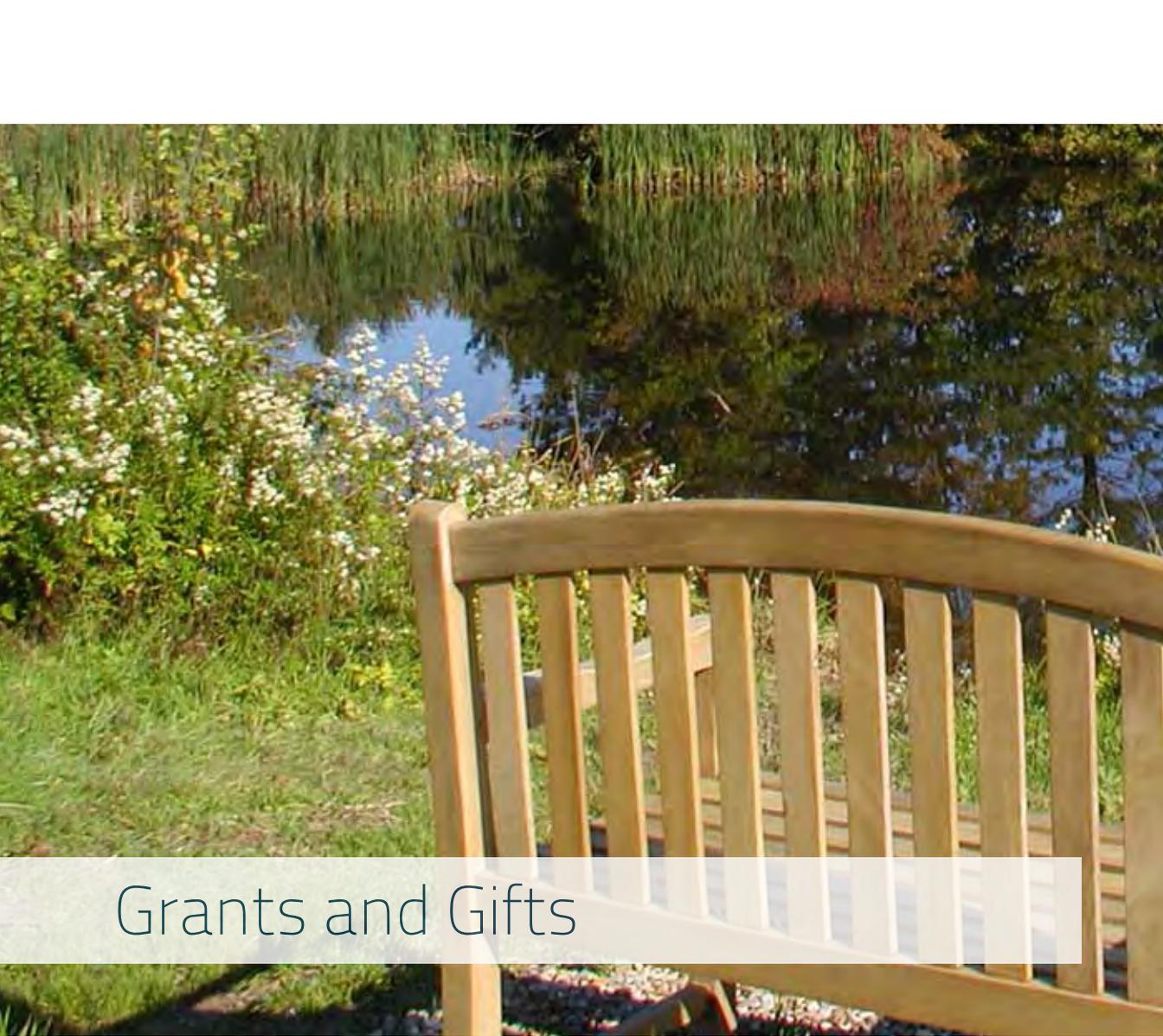
Second grade student from Hathaway Brown School on their annual wildflower walk at the farm

Hathaway Brown's use of the farm facilities included the Sheep Barn, Pink Pig, Kutina Classroom, Manor House and picnic areas. Visits included environmental programs for second, fourth and fifth graders, English Class field trips, Spanish immersion programs, middle school aquatic education, Advance Dance Company week-long retreat, student hikes, several faculty and staff professional meetings, and several social events.

During summer, two University School students volunteered their time. **Hayden Lane** and **Robbie La Croix** worked at the farm with farm horticulturist **Chris Bond**. Robbie La Croix, who is interested

in starting a compost pile at University School, volunteered six hours per day with one day devoted to working on recording temperatures in the compost pile onto a spreadsheet and working on a presentation. Hayden Lane volunteered six hours per days for four days per week, with one day devoted to preparing a presentation about the outdoor growing practices of the Farm Food Program to complement another existing presentation about insect control.

The Eastern Cuyahoga Audubon Society continues to use the farm facilities for its meetings. The group meets in the Kutina Classroom five times a year.



Grants and Gifts

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In August 2010, the farm received a generous gift of \$25,000 from an anonymous donor to publish the Farm History Book, written by Ana Locci and Chris Bond. Arcadia Press published the book in August 2011 as part of its Campus History Series. Proceeds from the book will benefit the farm educational programs.

Another generous anonymous gift of \$19,000 was given to the farm to restore the grape arbor originally designed by famous landscape architect Warren Manning. This garden is located at the Valley Ridge Farm. This gift greatly advanced efforts to restore the farm's historical gardens.

The University Farm Endowment Fund, which was established in 2007 by **Darhl Foreman** with a donation of \$10,000 to help maintain the property buildings, has grown to more than \$30,000 thanks to the generosity of alumni and farm supporters.

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, \$27,000 has been raised thanks to the generosity of farm friends and neighbors. This fund is already being used for new initiatives such as trails



Benches by the skating pond generously donated by Melvyn and Kay Resnick

brochures, green initiatives and support for the Farm Visitation Program.

Five new benches were generously donated to the farm; two by **Melvyn and Kay Resnick**, two by **Gilda Semenhuk** and one by **Chris Brandt** and **Beth Sersig**. This program helps to improve the farm outdoors while providing a new funding source to update the facilities.

On November 15, the Kulber Family Summer Student Internship Fund was created thanks to the generosity of **Mina Kulber**, alumna and friend of the farm. The purpose of this endowment is to provide

a salary for undergraduate students who work at the farm during the summer.



Major Improvements and Repairs

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The farm facilities continue to undergo extensive improvements and major repairs. The farm administration is committed to increasing the sustainability of the farm operations by reducing energy consumption. Purchases, improvements and repairs are aimed at reducing utility bills and fuel consumption while lowering maintenance time and costs. Construction and repair projects are under the direct supervision of **Mark McGee**, on-site farm foreman since 2000. From May to August, two undergraduate students, **Tim Martin** and **Evan Martin**, were hired to assist farm staff with general farm maintenance. Their hard work and dedication made it possible

to complete several maintenance jobs scheduled during spring and summer.

Several large painting jobs completed during summer and fall included exterior painting of the Main Barn and the Bonds' residence. Siding repairs and casing of the windows of both buildings were also done.

The Root Cellar doors were replaced in August 2011. Case Western Reserve carpenters **Tim** and **Wanda Logsdon** built and installed the new doors during the first week of September.



Wade gardens Grape Arbor restoration project at Valley Ridge Farm

The Banks' residence underwent waterproofing repairs September 2011.

Major repair work was done by the trail connecting the Squire Valleevue property with the Valley Ridge Farm. Strong rains washed out the trail adjacent to one of the fishing ponds. Repairs were done by Buddie Construction during the month of September.

An engineering study continued in 2011 surveying the walking trails that connect the Squire Valleevue Farm and the Valley Ridge Farm. The study provided information for the construction of a new driveway to

connect the two properties. Wetland and environmental studies were done at the property as part of the scope of work.

There were two major lead abatement projects in farm residences located in Valley Ridge Farm and Squire Valleevue Farm. Work included indoor and outdoor painting, stripping, and removal of material from site.

The farm's six private residences continue to receive updates including indoor and outdoor painting, new windows, new high-energy efficient appliances, new tile floors and carpets.



Thanks for Your Generous Support

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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 art teaching facilities and to improve outdoor

areas at the farm. Visit studentaffairs.case.edu/farm/support/bench.html for more information.

University Farm Endowment: This fund was established in 2007 to help improve and maintain the property with more than 20 structures and 389 acres of green space. Many of the farm buildings are more than 100 years old and 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.



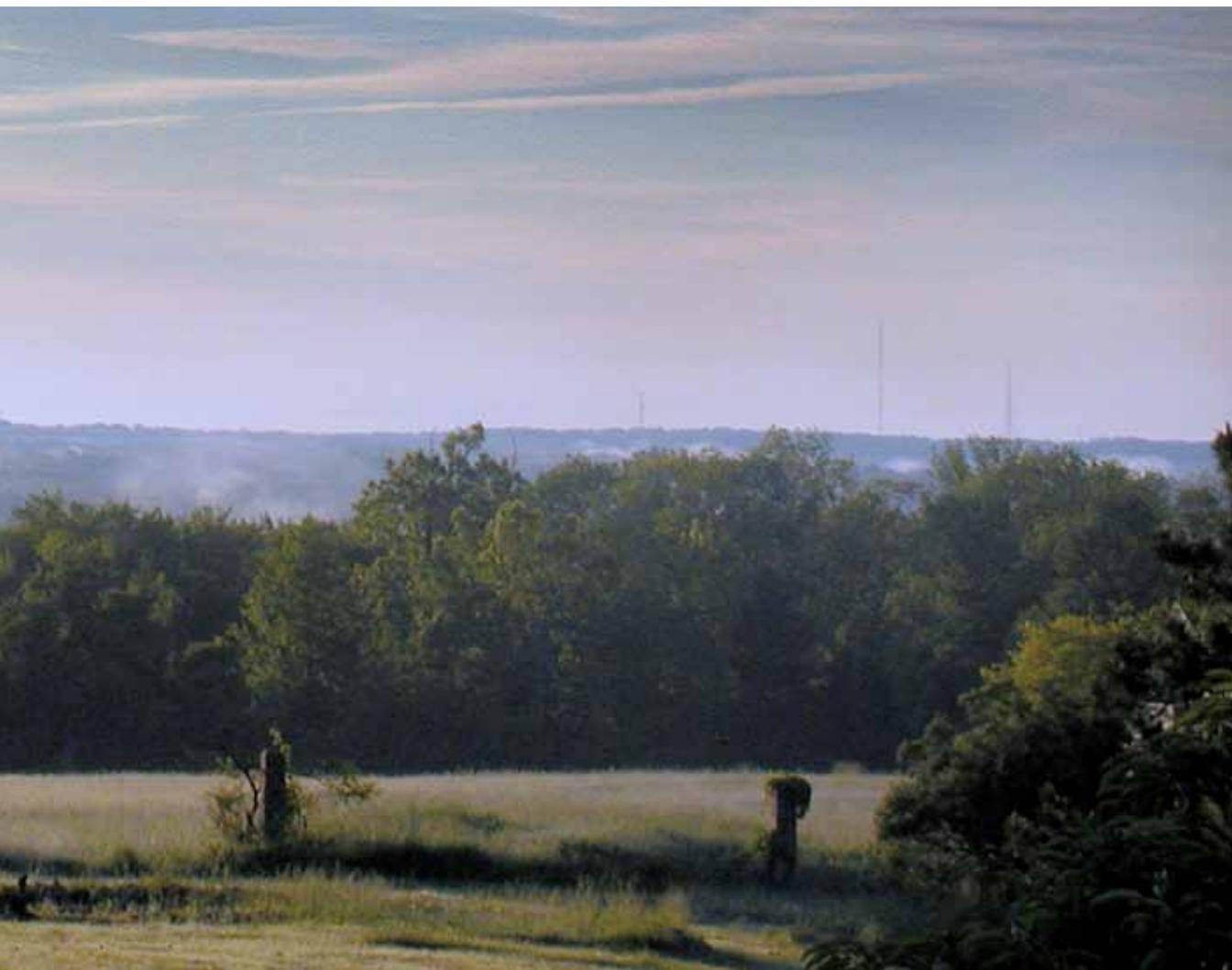
Winter view of the farm's historical root cellar and English barn

Farm Tree Planting Dedication Program: For a \$600 gift, farm donors may select a tree to be planted at the Squire Valleevue Farm, choosing from an evergreen tree, a shade tree or an ornamental tree.

Call 216.368.0274 or visit studentaffairs.case.edu/farm/support to learn more about giving to the University Farm.



Statistics



View of the valley (Squire Valleevue) from Andrew Squire bust site

Table 1. Farm Usage by Facilities from November 1, 2010 to October 31, 2011

Facilities	# Groups	# Visits
Picnic Areas	134	7,615
Sheep Barn	87	5,390
Pink Pig	110	2,071
Manor House	52	2,386
Main Barn Kutina Classroom	73	1,045
Main Barn Training Classroom	3	101
Mather Teaching Lab	51	770
Main Barn Faculty Offices	7	582
Greenhouse Lab	24	977
Debra Ann November Research Greenhouse	33	986
Ceramic Studio	5	170
Cross Country Trail	62	2,598
Community Garden Plots	20	600
Total Farm Users by Facilities	661	25,291
Estimated Casual Visitors		6,000

Table 2. Farm Usage by Program from Nov. 1, 2010 to Oct. 31, 2011

Programs and Events	# Groups	# Visits
Undergraduate and Graduate Courses		
Genes and Evolution (BIOL 214) (Spring)	12	360
Genes and Evolution (BIOL 214) (Fall)	12	360
Organisms and Ecosystems (BIOL 216) (Summer)	2	26
Aquatic Lab (BIOL 339) (Fall)	1	132
Principles of Ecology Lab (BIOL 351L/451L) (Fall)	1	216
Introduction to Entomology (BIOL 318L) (Fall)	1	90
Herpetology (BIOL 305L) (Fall)	1	90
Hydrogeology (GEOL 321/421) (Fall)	1	15
Geophysical Field Methods and Lab (GEOL 330/430)	3	27
ACNP Flight Nursing Summer Course	1	300
Raku Ceramics (ARTS 399)	1	14
Raku Ceramics (ARTS 497)	1	77
Raku Ceramics (ARTS 214, 314, and 365)	1	32
Photography Studio I (ARTS 220)	1	8
Ceramic (ARTS 330) (Spring)	1	25
Ceramic (ARTS 330) (Fall)	1	33
Modern Languages and Literature Immersion Programs	5	195
School of Nursing Senior Capstone Projects	3	108
Investigative Methods in Nutrition (NTRN 561)	3	90
Public Health Nutrition (NTRN 550)	1	12
CONTINUING EDUCATION		
Summer in the Country	9	675
Non-fiction Fall - Winter course	2	252
Autumn in the Country	7	266
ONSITE RESEARCH		
CWRU Undergraduate Research	16	182
CWRU Graduate Research	5	280
Holden Arboretum	2	70
Cleveland Museum of Natural History/Cleveland State	1	15
John Carrol University Research	1	50
Cleveland Botanical Gardens	1	20
Ohio State University	2	10
Faculty Sabbatical	1	80
FOOD PROGRAM	12	600
STUDENT LIFE		
Farm Harvest Festival 2011	1	415
Society of Automobile Engineers (SAE) Mini Baja Club	1	15
Engineers Without Borders	1	60
CWRU Cross Country Meets		
Case Sudeck Invitational	15	700
OTHER CWRU EVENTS		
New Faculty Orientation	1	90
School of Medicine Orientation	1	120
School of Dentistry Annual Picnic	1	300
Archery Conference	1	10
Fraternities/Sororities events	18	648
Case Alumni Association Open House	1	80
COMMUNITY SERVICES		
Local Schools, Grades K-12	18	596
North Coast League Cross Country Meet	12	600
Cleveland Audubon Society	1	105
Cleveland Museum of Natural History (CMNH)	3	32
CMNH Future Scientist	4	48
Other Non-profit Organizations	27	1,309
HathawayBrown School	25	1,180
John Carrol University Biology Courses	5	106
Visiting Groups Presentations	2	85
Cleveland State Horizon League Championship Cross Country	9	800
Total Farm Users by Programs	259	12,009

Farm Management Committee

David M. Hutter

Professor, Physical Education and Athletics

Kenneth L. Kutina

Vice President Emeritus for Institutional Planning

Ana B. Locci

University Farm Director and Adjunct Assistant Professor, Department of Biology

Heidi Martin

Assistant Professor, Department of Chemical Engineering

David McCoy

Associate Professor, Environmental Health Sciences, School of Medicine

Glenn Nicholls

Vice President for Student Affairs, Chair (11/2010-6/2011)

Beverly Saylor

Associate Professor, Department of Geological Sciences

Stephen Campbell

Vice President for Campus Planning and Facilities Management, Chair

Farm Staff

Ana B. Locci

Director

Mark B. McGee

Foreman

John Schwartz

Group Leader

Christopher Bond

Horticulturist

Patty Gregory

Department Assistant

Zoey Bond

Manor House Events Coordinator

Alan Alldridge

Utility Worker

Shane Brown

Utility Worker

Meaghan Wierzbic

Student Fellow

Report submitted by:

Stephen Campbell

Chair of the Farm Management Committee and

Ana B. Locci, Director of University Farm

December 2011

Photos by Ana Locci

Cover: Summer students at the Valley Ridge Farm vegetable gardens

UNIVERSITY FARMS
Squire Valleevue Farm and
Valley Ridge Farm
37125 Fairmount Blvd.
Hunting Valley, Ohio 44022