



Student intern Jane Vogelmann harvests winter greens growing in a hoop house at the Full Moon Cooperative, a part of Spring Valley EcoFarms in Athens.



One farm at a time

Students in the Eugene P. Odum School of Ecology get real-world experience in a holistic environment



Carl Jordan shows his students the rich black soil atop the red Georgia clay.

by Kelly Simmons

photos by Andrew Davis Tucker

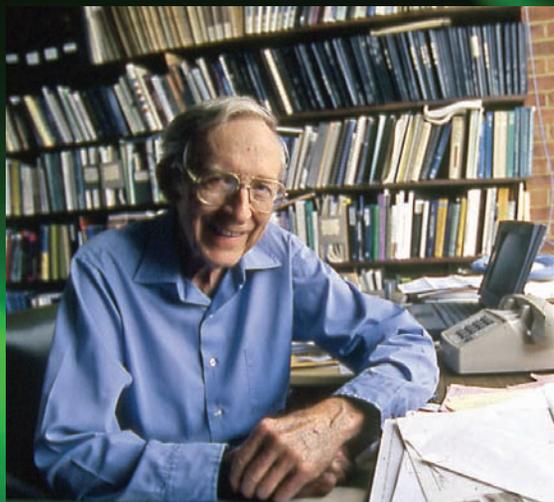
Carl Jordan kneels to the ground in a wooded area and brushes away wet leaves. He digs a spade into the soil, softened some by a rare fall rain, and scoops out the dirt until he hits the red Georgia clay.

He points to the rich black topsoil. "This is the natural capital down to about here," he says, his finger on the line between the organic matter and the underlying clay. "That's all that's left now."

This is the first stop for students on Jordan's 100-acre organic farm in east Athens. And it's the perfect place for them to understand Jordan's work in sustainable agriculture.

"I show them what the soil looked like 200 years ago before the settlers came," he says. "This was their capital. Now it's all gone."

Spring Valley EcoFarms is a working laboratory for students in the University of Georgia School of Ecology. It is a place where students can put the ecological science and theory they learn in a classroom to a real-world test.



RICHARD FOWLKES

Eugene Odum's biggest legacy is UGA's Institute of Ecology, which he founded and which is now a free-standing school named for him.

PIONEER OF MODERN ECOLOGY

by Anisa S. Jimenez

EUGENE ODUM was attracted to ecology, he said, because it is "a bridge between man and nature." Odum went on to serve as ecology's steward, encouraging a holistic view of the science and fostering interdisciplinary research.

An avid ornithologist, much of his early research focused on birds. His research interests soon expanded and, together with his brother Howard, he published a groundbreaking, award-winning paper on coral reefs that demonstrated the symbiosis between corals and algae. Odum also influenced policymakers. For example, he helped gain support for the Coastal Marshlands Protection Act by making Georgians aware of the value of protecting wetlands.

Odum is credited with making the term "ecosystem" a household word, thus helping to implant ecological issues into the American psyche, and he literally wrote the book on ecology. His textbook *Fundamentals of Ecology*—the first of its kind—was originally published in 1953 and is now in its fifth edition.

He was responsible for securing a grant from the Atomic Energy Commission in 1951 to initiate ecological research at its Savannah River nuclear facility, paving the way for UGA's Savannah River Ecological Laboratory. Also in the 1950s, he led development of UGA's Marine Institute on Sapelo Island.

For more on Odum, read *Eugene Odum, Ecosystem Ecologist and Environmentalist* by Betty Jean Craige, professor and director of the UGA Center for Humanities and Arts.

—Anisa Jimenez is public relations coordinator in the Odum School of Ecology.

Many universities study organic farming and oversee research in areas of sustainable agriculture, Jordan explains. But few provide a comprehensive facility where students can explore how soil, insects, animals, plants and people interact to create a sustainable environment.

"There isn't any other facility like this," says Krista Jacobsen, a Ph.D. candidate who has been experimenting with alley cropping—planting wide rows of trees with a companion crop grown in the alley between to increase the nutrients in the soil—at Spring Valley. "I had the advantage of walking into this," she says, waving her hand toward the rows of legumes she has planted to help restore the soil.

The farm, which is owned by Jordan and his family, is one of the unique features of the Odum School of Ecology, which was created last year by reorganizing the existing Institute of Ecology, then part of the College of Environment and Design. It is the only free-standing school of ecology in the world.

In the next few years, Dean John Gittleman hopes to increase the undergraduate population of the school by 20 percent, a goal driven by increased interest in ecology and the environment.

"People are becoming more aware," Gittleman says. "We see dramatic ecological changes all around us—in habitat loss, species extinction and global climate change."

In creating the stand-alone school, UGA recognizes the importance of the study of ecology and gives it more prominence, UGA President Michael F. Adams says.

"This university is committed to the important instruction, research and public service that will go on at the Odum School for decades to come," Adams says. "And it is a fitting memorial to Gene Odum, who created the discipline of ecology and is one of UGA's most treasured icons."

Odum, who died in 2002, founded the Institute of Ecology at UGA in the 1950s. Under his direction, the school became internationally recognized for its holistic approach to the study of ecosystems, and Odum became known as a pioneer of modern ecology.

Carl Jordan, who came to UGA 34 years ago and worked closely with Odum, bought the farm in 1993 after a quarter-century studying the impact of agriculture and forestry on the world's ecosystems.

Spring Valley Farm has existed since the Civil War, first farmed for cotton, then wheat, sorghum and other crops. Jordan knew the oft-tilled land had been stripped of many of the valuable nutrients needed to sustain the soil. He decided to experiment with ways to restore the land and create a sustainable environment for farming.

He began mixing fast-growing Paulownia trees from China as a nurse species for slower growing oaks and ash to create a natural forest. He introduced vegetation that would help return needed



Carl Jordan has spent his career studying the effects of agriculture and forestry on the world's ecosystems.



Several homes already are built in Beech Creek Preserve, off West Lake Drive.

Preserving a legacy

Before Eugene Odum died in 2002, he made sure that his commitment to holistic ecology would extend beyond the boundaries of academia. Beech Creek Preserve, a 16-home neighborhood on the banks of the Middle Oconee River, is part of Odum's legacy to UGA and to the Athens community.

Odum left 25 acres of woodlands to the university, stipulating that it be sold to generate revenue for the then-Institute, now School of Ecology. From that, \$1 million was set aside for a professorial chair in Odum's name. The rest was to be used to endow the Eugene and William Odum Ecology Fund, to benefit the school.

Odum stipulated how the land should be developed once it was sold. UGA worked hand-in-hand with the Oconee River Land Trust to ensure that the development would be environmentally friendly. The property was sold to John Willis Homes, which has a history of ecological stewardship. Nearly 60 acres of the land remain green space, including 15-acres along the riverfront. Walking trails follow the river, providing a natural common area for residents of the subdivision.

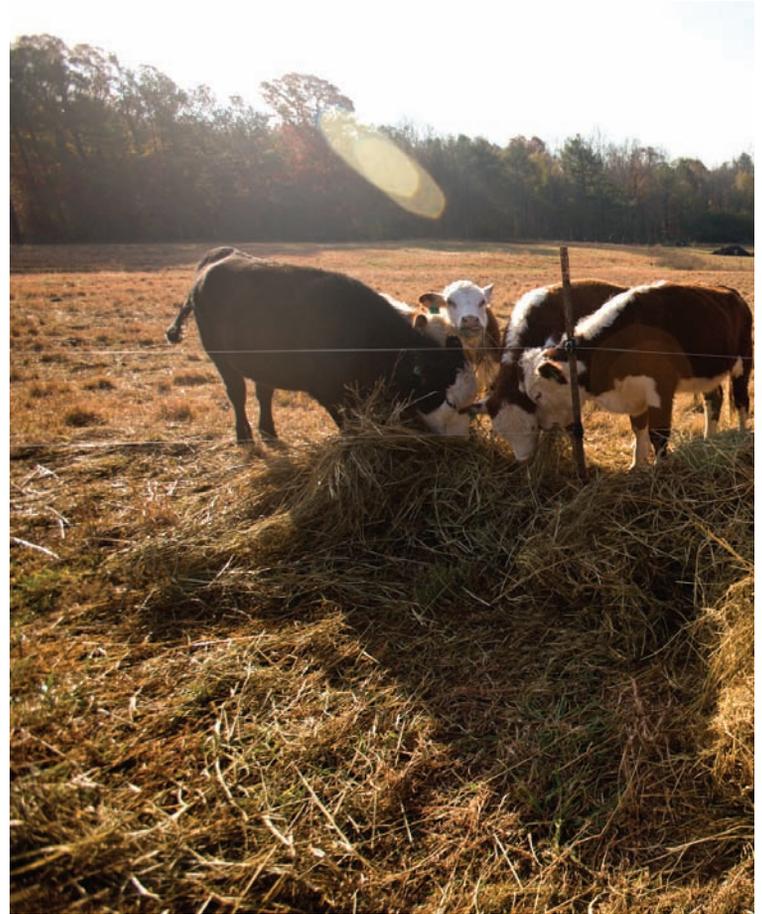
For information on Beech Creek Preserve, contact Christy Baker Jenkins, christy@cjandl.com, 706/540-8787.

GET MORE

Odum School of Ecology:
www.ecology.uga.edu
 Spring Valley EcoFarms:
www.springvalleyecofarms.org

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For giving opportunities to the Odum School of Ecology, contact:
Elizabeth Butler at ehbutler@uga.edu or 706/542-6007



Jason Mann, who runs the Full Moon Cooperative at Spring Valley EcoFarms, also is a majority owner and founder of Farm 255, a restaurant in downtown Athens. The cows at Spring Valley are rotated from pasture to pasture to prevent overgrazing.

nitrate to the soil. He brought in horses, cows, chickens and pigs, rotating them to different areas of the farm to graze and refuel the land with their rich manure.

It is the ultimate teaching facility for students, whether they are undergraduates learning the basics of ecology or Ph.D. candidates studying specific aspects of organic agriculture. From May through the fall, hundreds of students from UGA as well as area K-12 schools tour the farm, and Jordan holds special events each year to expose community gardeners to his concepts.

The farm also attracts scientists from other disciplines who want to test their research in an organic environment. For example, UGA entomologists set up a number of beehives on the property to see how the insects would adapt without pesticides to protect them from parasites. Instead of chemicals, the scientists sprinkled the bees with powdered sugar. The bees, attracted to the sweet powder, licked the sugar off their bodies, clearing away the parasitic Varroa mites in the process.

"They're breeding more hygienic bees," Jacobsen says.

The farm also has benefited from the bee experiment.

"The year after the hives appeared we could see a big difference in the health of the crops," Jordan says.



Ph.D. candidate Krista Jacobsen will go to Pennsylvania State University after summer graduation to continue her research in agroecology.



ROSEMARY and MINT



SWISS CHARD



KALE

It's a cool winter morning at Spring Valley, but there is plenty of activity in the hoop houses that hold winter crops. Students use their hands to deftly weed around the kale, broccoli and collards, and pick the leaves that are ready for harvest. By the end of the day, the hearty greens will be on their way to a local restaurant.

This is Full Moon Cooperative, a part of Spring Valley Eco-Farms. Jason Mann, a Ph.D. candidate, is the founder and director of the co-op, which specializes in biodynamic fruits, vegetables and meats. While the nonprofit farm is a business, its operation creates a unique opportunity for students to study an integrated agricultural system in a real-world context, Mann says.

As the winter greens mature and young strawberries await spring under the hoop house's warm cover, most of the farm lays in winter rest and renewal. Thick rich rye and clover cover nearby fields, feeding the soil the nutrients it needs to produce healthy crops the coming spring.

"Historically, agricultural science took place in a box—in a lab or in a highly controlled environment," he says. "A lot of the problems farmers face today are a result of that reductionism. Ecological farming is a complex system of soils, water, weather, bugs, bees, plants and animals that doesn't respond well to being forced into a simplified box."

Students clearly want the hands-on experience that the farm provides. Mann gets 20-30 applications for the four internships he offers each year.

For Todd Stockham, the experience was "transforming." The 32-year-old, who already earned a bachelor of fine arts at UGA in 2000, was back in school last year trying to figure out what to do with his life. Enrolled in ecology, he took a Maymester course at Spring Valley EcoFarms and met Mann.

"Organic farming is going to be the way of the future," says Stockham, who wants to run his own co-op one day. "Philosophically, it helps me feel like I'm doing something for the world."

Jordan stands atop the hill on the back of the property, a series of terraces established decades ago by cotton farmers. He and son-in-law Hugues Foucart, the farm's botanist, use some of the terraces to experiment with fruit, planting varieties of apples, peaches and pears. Nearby tangled grape vines cling to trellises. They lost most of last year's blueberries to a spring freeze.

Humidity makes it hard to grow the fruits in the south, Jordan says, but it doesn't stop him from trying. He's experimenting now with shade-grown blueberries, mimicking the South American practice of growing coffee in the shadow of trees.

"The thought occurred to me, 'I wonder if shade-grown blueberries are better than regular blueberries,'" he says.

He'll find out once the Paulownia trees that he planted next to the blueberries mature.

"Many universities have organic experiments," Jordan says. "There's no facility for people who are just interested in organic agriculture and would like to be certified organic farmers."

"Organic farming today is where the Wright Brothers were in 1903." **GM**