

Land Report

Number 115, Summer 2016 · The Land Institute



About The Land Institute

MISSION STATEMENT

When people, land and community are as one, all three members prosper; when they relate not as members but as competing interests, all three are exploited. By consulting nature as the source and measure of that membership, The Land Institute seeks to develop an agriculture that will save soil from being lost or poisoned, while promoting a community life at once prosperous and enduring.

OUR WORK

Thousands of new perennial grain plants live year-round at The Land Institute, prototypes we developed in pursuit of a new agriculture that mimics natural ecosystems. Grown in polycultures, perennial crops require less fertilizer, herbicide and pesticide. Their root systems are massive. They manage water better, exchange nutrients more efficiently and hold soil against the erosion of water and wind. This strengthens the plants' resilience to weather extremes, and restores the soil's capacity to hold carbon. Our aim is to make conservation a consequence, not a casualty, of agricultural production.

LAND REPORT

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ELECTRONIC MEDIA

For e-mail news about The Land Institute, write to Carrie Carpenter at carpenter@landinstitute.org, or call. Web site: landinstitute.org.

SUPPORT

To help The Land Institute, see the contribution form on page 30, or go to landinstitute.org. Contributors receive the Land Report.

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Maya Kathrineberg and Marty Christians cut and bag heads of intermediate wheatgrass at The Land Institute. Wheatgrass will become the first Land Institute plant used in a widely sold product. See page 4. Scott Bontz photo.



Each intermediate wheatgrass plant's selected heads go in a labeled bag. Later comes measuring grain size and weight. These measurements are short of annual wheat's, but over generations of breeding they have gained. The perennial grain is already attractive enough for Patagonia Provisions to put it in beer. Scott Bontz photo.

A toast to (and with) Kernza

Perennial grains enjoy more researchers, and a commercial beer

SCOTT BONTZ

The outfitter Patagonia plans an October release of the first large-scale product using a perennial grain from The Land Institute. Long Root Ale, its grain ingredients 15 percent Kernza, will be sold on the West Coast. A much bigger company, General Mills, might take several years to offer wheatgrass among its dozens of products, but it is testing.

Both companies want to develop goods with food raised more sustainably, and in early July they sent representatives to a conference for development of the perennial called intermediate wheatgrass. Kernza is a trademark registered by The Land Institute for food products made from wheatgrass. Researcher and conference organizer Lee DeHaan told three dozen attendees that he thought it the first meeting of such size for a single perennial-grain candidate. He was happy to see this happen just 13 years after starting selection and breeding. The institute generally estimates that to develop a species suitable for widespread planting will take at least three decades.

A month earlier a similar gathering drew from as far as Argentina a dozen researchers involved or interested in the perennial oilseed crop candidate called silphium.

The meetings came less than two years after The Land Institute invited more than 50 biologists and social scientists from 10

nations to talk about perennial grains and their agricultural ecology. That conference was broader and more exploratory; its groups of researchers interested in silphium and Kernza were smaller. The gatherings this year show how interest has mounted, partly because of how the institute's budget growth has helped it enlist other organizations.

The roots of perennials typically reach much deeper than those of annuals, and better cycle water and nutrients as well as secure soil. Hence the name of the new beer from Patagonia Provisions, the outfitter's young food products division. Long Root samples have been offered at showings of the film "Unbroken Ground," which connects food choices and climate change, and includes interviews with DeHaan and Land Institute President Wes Jackson. These events are mostly at Patagonia stores on the West Coast, but the tour first hit New York City, Washington, DC, and Chicago, and will go to Hawaii.

Most of the grain in the new ale remains malted barley. James R. Farag, product manager for Patagonia Provisions, said extant malting machinery did not work with Kernza's smaller seed. The company is working to solve the problem. This is one of many improvements remaining for wheatgrass to be grown, processed, and sold widely as a grain crop. But even established grain crops are never finished like a

manufactured product can be, if for no other reason than the endless work of finding resistance to evolving pests and diseases.

The first batch of Long Root will be 5,000 to 6,000 cases, with 24 cans per case, and made at Hopworks Urban Brewery in Portland, Oregon. Patagonia is exploring breweries in other regions, but chose

Hopworks because it is organic and qualifies as a “benefit corporation” for how it treats workers and considers its effects outside the business. “We are dedicated to growing Kernza with organic and regenerative practices,” said Birgit Cameron, senior director of Patagonia Provisions. In 2014 the company paid for 54 acres of wheatgrass production



Sheila Cox transfers silphium seeds that have sprouted on wet paper and proven viable. This wild plant in the sunflower family is being developed as an oilseed crop. Scott Bontz photo.

in Minnesota. For 2015-16 the acreage expanded to 75. The hope for next year is more than 125 acres.

The Perennial, a restaurant in San Francisco, serves bread made with Kernza, Birchwood Cafe in Minneapolis, Minnesota, has served wheatgrass waffles and tortillas, and The Land Institute has sold small bags of flour. But until now no product with Patagonia's reach has used one of the institute's perennial grains.

General Mills, a company worth more than \$20 billion, would need thousands of acres of wheatgrass, whether to make one breakfast cereal dedicated wholly to Kernza, or to spread small percentages of Kernza across the company's many products, which include the brand names Cheerios and Cocoa Puffs, and the more health-conscious presentations Nature Valley, Cascadian Farm, and Annie's Homegrown. Laura Hansen, General Mills's senior principal scientist at the wheatgrass meeting, said the company wants to promote sustainability, and perennial grains would help meet that goal. She did not want to publicize details, but said General Mills was exploring wheatgrass in test products.

Some of the other conferees involved with wheatgrass: Doug Cattani has about 5,500 plants at the University of Manitoba and this year began to test how wheatgrass grows with sunflower, onion, and legumes. Traci Kantarski and Kevin Dorn at Kansas State are helping unravel the species' large, complex genome. Steve Culman, of Ohio State and a former Land Institute graduate school fellow, explained trials in which wheatgrass serves as both grain and forage crop at 11 sites from Alberta to Kansas and Colorado to New York. Elizabeth McVay Greene told how her business, Plovgh Inc., is organizing the supply chain to connect growers with buyers of the new crop. She

said demand now exceeds supply. On the buying end, Zachary Golper told of experiments with wheatgrass bread at his Bien Cuit bakery in Brooklyn, New York.

The silphium meeting included Jared Prasifka, who at the US Department of Agriculture in Fargo, North Dakota, studies plants provided by Land Institute researcher David Van Tassel. He identifies insect pests, gauges what damage they do, and thinks of how to cut losses.

At the University of Minnesota population geneticist Yaniv Brandvain studies how species occur and how they last. The genus silphium provides a good opportunity for this, and the results could help identify which species in the genus are related closely enough to be used in breeding. Existing crop plants were almost all domesticated thousands of years ago, and in the process lost much of the original genetic variation, including some untapped strengths. The genetics of domestication can more easily be studied in crops like wheatgrass and silphium, where the wild ancestors are still known and available.

Nolan Kane, at the University of Colorado, can help Brandvain by analyzing silphium's genome. Understanding how to see and use variation spread throughout the whole genome gives breeders options for improving and speeding selection. Kane wants to know the genetics not only of plants, but also of microbes found among them. Farming can greatly change soil community. As with silphium itself, the change to the microbe community among its roots could be just beginning with Van Tassel's improvements. Watching this might help inform silphium breeders and farmers.

John Hill Price, a doctoral student at the University of Minnesota, is planting cuttings, each made from one plant, at six sites across latitudes from Minnesota to Texas.

For at least three years he'll compare how Van Tassel's identical siblings grow, flower, and age. This kind of "identical twins raised apart" study can show which traits are controlled genetically and which vary mostly due to the environment. Price will move on to investigating important traits for domestication at the genomic level.

Shorts

The Scandinavian connection

Colleagues in Sweden and Denmark this April brought Land Institute Research Director Tim Crews to help with their study of perennial grains and growing species in mixtures, or intercropping. His trip included, at the University of Copenhagen, a 12-hour-a-day, five-day course on root ecology, and review of how the roots of Land Institute silphium and intermediate wheatgrass plants are being studied in 14-foot, windowed towers. Danish researchers are also examining soil microbes, nutrients, and water relations in the rooting zones of these perennial crops. In the field they use minirhizotrons, clear plastic tubes pushed 3 meters into the soil and into which cameras are lowered for viewing root growth.

Under the direction of Lennart Olsson, Sweden's Lund University hosted a two-and-a-half-day graduate seminar covering evolution, ecology, and geology, and ended each day with Crews tying the subjects together around agriculture.

Swedish Agricultural University has begun a long cropping experiment that includes wheatgrass grown alone and with al-

falfa. This new study is expected to last at least decades, perhaps a century.

Managing the project is Erik Steen Jensen, who attended a Land Institute conference in 2014. "This is an example of the fruits that are starting to bear now as a result of that involvement," Crews said. He said of the Scandinavian studies, "They're highly relevant to our work here."

World researchers work here

Damian Ravetta and Alejandra Vilela left silphium plots to overwinter in Argentina, and at The Land Institute studied the latest generation of this perennial oilseed bred by institute researcher David Van Tassel. Ravetta examined the effect of rust, a fungal disease, on photosynthesis and seed set. Vilela is interested in whether Van Tassel's cycles of selection for seed yield have started to indirectly affect traits such as leaf thickness and area. Matthew Newell took a five-month sabbatical from New South Wales Primary Industries in Australia to work with Research Director Tim Crews and perennial-wheat breeder Shuwen Wang. He studied breeding, intercropping, and whether grasses can, like legumes, work with root bacteria to tap protein-building nitrogen from the atmosphere. Eline van de Ven, from HAS University of Applied Sciences in the Netherlands, studied how shading, rust, and lygus bugs affect silphium's growth.

Presentations

Land Institute staff members will speak August 9-10 in China; September 30 in New Haven, Connecticut; October 22 in Great Barrington, Massachusetts; and November 10 in Albuquerque, New Mexico.

Prairie Festival: the view from 40

The Land Institute began during the bicentennial year of the Declaration of Independence, and the organization's own revolution, perennial grains, this year are for the first time ingredients in a product that will be sold widely. (See page 4.) Also this year, the institute's only president until now, Wes Jackson, is handing off. For his thoughts about what has happened during those 40 years, and what he'll be doing in years ahead, see page 24. And to celebrate with others who've had hands in the history, and to talk about changes to come, attend the institute's Prairie Festival, September 23-25. The festival will take an unusual format of panel discussions, involving former board chairs, interns, and friends including envi-

ronmentalist and writer David W. Orr. The stories of co-founder Dana Jackson, an inaugural student, and one of the last interns help fill out this issue of the Land Report. At the festival, writer Wendell Berry will speak, and then Jackson is to introduce his successor, Fred Iutzi, who will talk about his own visions. For his story, see page 28. In addition to the regular festival features of a barn dance and singer-songwriter Ann Zimmerman, Peter Buffett will perform in Salina's historic Stiefel Theater, and the gallery will show more than 100 photos of institute history. Festival attendance might be the largest in that history, and space will be limited. For more information, or to register, see Events at landinstitute.org or call 785-823-5376.



Wes Jackson and his friend, the writer Wendell Berry, during The Land Institute's early days. Berry will speak at the institute's Prairie Festival in late September. Displayed will more than 100 photos of institute history.



The Jackson family after returning to their land in Kansas and before beginning The Land Institute. From left are Wes, Scott, Laura, Sara, and Dana. In addition to developing an organization that talked about how to live more sustainably, the family grew much of their produce, and kept chickens, pigs, and a milk cow. Harry Mason photo.

A family enterprise

How Dana Jackson saw the building of The Land Institute

SCOTT BONTZ

The Land Institute, which turns 40 this year, is commonly seen as the child of Wes Jackson. Jackson had the vision to make agriculture work like a prairie, and to spread that vision he had the charisma. But until the institute reached driving age it enjoyed two parents. Dana Jackson was Wes's wife, discussant, and editor, and she handled much of the organizing and details. The Pew fellowship among Wes's often-cited credits went to them jointly. They were complementary forces.

Dana helped revive the fledgling project from ashes with thank-you notes for donated books and dollars, and she spread its wings by stuffing a recipe box with information to cultivate "Friends of the Land." She helped teach students, and she founded and produced the Land Report.

The Jacksons also raised a boy, Scott, and two girls, Laura and Sara. Wes built for them, and Dana sewed, gardened, and cooked. They all worked to see what it takes to run a household on contemporary sunlight, and, through the institute, to take along their community and perhaps the world. Then Dana helped Wes dig into Problem Number 1, agriculture, from his inspiration at once both radical and obvious: how nature builds and sustains its productive capital with plants growing in communities diverse and rooted perennially.

In conversation with Dana today, two

ideas recur. One is that where The Land Institute went is not where it started on a family's 28-acre homestead overlooking the Smoky Hill River: the mission evolved. In 1976 the vocabulary did not include "herbaceous perennial grain polycultures." The other idea is that the institute was a family enterprise.

Dana's parents, Ed and Reithel Percival, both grew up on farms. Her mother attended school through eighth grade. Her father left after ninth grade. As newlyweds they homesteaded in Montana. They returned to Kansas, and Ed, with his brother, opened a Ford garage about 25 miles northwest of Salina, in Beverly. Dana was born there in 1937, eight months after Wes. She was the last of three girls and two boys, six years after the next-youngest child, 16 after the oldest. Her birth came in the Great Depression, and in the Depression the Percival garage failed. Then Ed worked as a mechanic in Salina and nearby Abilene, where the family moved when Dana was 5.

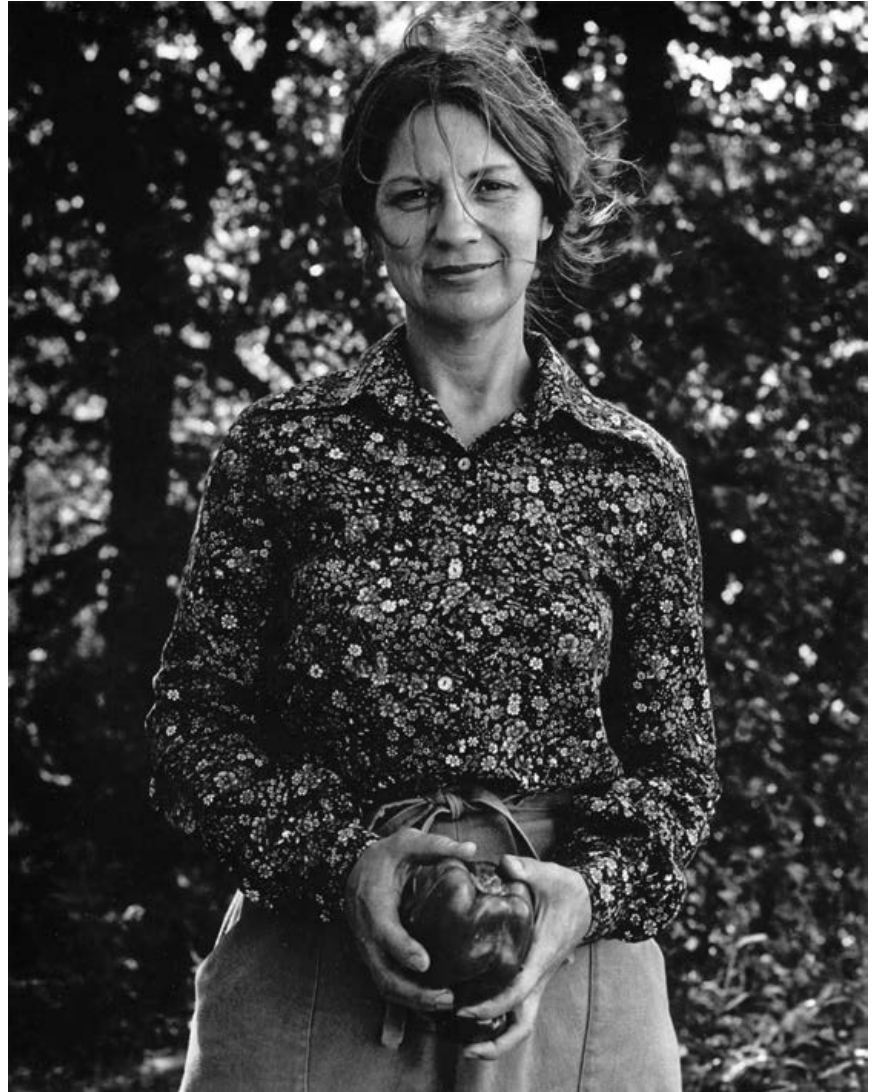
She said they were not well off, but secure. "You didn't talk about what you wanted, or what you didn't have," she said. "My mother had the capacity to stretch." Her parents taught frugality and honesty. They also pushed for education. Ed did not want to see a report card show anything lower than A-minus. But women weren't expected to pursue professions. The Percivals wished

for Dana no more than self-reliance. Other influences on her values came from the compassionate people in her Methodist church. She loved the fellowship.

By the time she was 30, however, she'd had enough "churchy stuff." She was impatient for congregants to acknowledge what she saw as environmental crisis. She had not come to focus on agriculture. But her child-

hood home had been a place for flour milling, and her parents farm-reared. She said the context of everything in Abilene was rain and wheat.

Dana graduated from high school in 1955. In her senior year she visited Salina to consider Kansas Wesleyan University. A friend arranged a blind date with Wesleyan freshman Wes Jackson. Dana began at the



Dana Jackson about when she helped found The Land Institute. Terry Evans photo.

Methodist school, married Wes at 20 in her junior year, and then transferred to the University of Kansas, where he earned a master's degree in botany, she a bachelor's degree in language arts education. The family went to North Carolina State University for Wes to earn his doctorate. Along the way Dana taught: English, speech, and drama. The Jacksons came back to Salina, for jobs in high school and at Wesleyan. Their third child was born.

By now Dana thought of natural systems and how people were wrenching them. Wes's first book gathered the writings of others on this theme. Dana and friends founded Salina Citizens for a Better Environment, made speeches, printed handouts, and lobbied the city.

When the Jacksons moved to Sacramento for Wes to build the environmental studies program at California State University, Dana joined the Sierra Club, worked with the League of Women Voters, and took classes in the new program, including an introduction to environmental law. The federal and California environmental protection acts were fresh. She worked for California's coast protection law, among numerous innovative safeguards now taken for granted.

The Jacksons lived in California's Central Valley, the nation's fruit and vegetable capital, for three years. After he earned tenure, with a leave of absence he took the family back to the country's breadbasket. When the leave ran out, on land just south-east of Salina they stayed. Wes laid garden irrigation, fashioned a solar shower, assembled buildings, and brought home chickens, pigs, and a cow. Dana taught as a substitute and learned to grow, can, and freeze food. The children gathered eggs, mowed grass, helped build fence and pour concrete, and milked the cow.

Dana began study for a master's degree to renew her teaching certificate. Wes also thought of teaching, but outside the status quo. At a hot dog roast in the yard of Salina lawyer John Simpson, he aired his idea: a school based on alternative ideas for agriculture, energy, shelter, and waste management. Simpson was game: he gave seed money and wrote a legal foundation.

The Jacksons started by inviting students. In the morning the young people attended classes, and in the afternoon they worked with their hands. The first job, inaugural student Nancy Vogelsberg-Busch said, was to build an outhouse. Having lived with Navajos, she went on to set rough posts and beams for an Indian house. This remains nested in a hillside near the Jackson barn, storing signage for the institute's annual Prairie Festival, along with industrialist leftovers such as glass doors that Wes scavenged from the start of his campaign to power down from the growth economy.

"Dana was a real stabling force for me," Vogelsberg-Busch said. "She was my 'mother mentor.'" Before Wes's ideas took off, Dana encouraged students to do the best that they could and take care of soil. "Dana inspired me. She led me to believe women could and should be farmers." Vogelsberg-Busch went back to her parents' farm, eventually bought it, and raises organic beef. (See her story on page 16.)

Six weeks after classes began, the classroom building burned. With it went the books, tools, and Wes and Dana's teaching files. They moved the classes to their home. (At that time everything of Land Institute's was on Jackson land.)

Wes was already well known, Dana said. He could turn a phrase and capture imagination with shocking expressions like "The plow has destroyed more options for

future generations than the sword.” He made a little income from speeches. After the fire, she said, “The future was really unsure.” But now, from outside of the handful of Salina professionals and businessmen who had ventured the first capital, and unasked, people sent them money. And they sent books to build a new library. Supporters including physicians and lawyers grabbed hand tools to help Wes and his children resurrect the classroom building. (Scott Jackson went on to a career in building.)

At the kitchen table Dana wrote thank-you notes. With each of these she also recorded on a card what would now be called “contact information.” She likes to say, “The Land Institute was born in a recipe box.” The Jacksons saw that support could be much broader than from a few well-to-do friends and a handful of students who reached campus by bicycle. The couple turned to people who had donated without solicitation, called them Friends of the Land, and each year asked for them to renew their membership.

The institute remained modest. It recycled the old timber that Wes had scrounged. Dana stopped driving 70 miles to Kansas State University for her classes; there was too much to do at home. She made the children’s clothes and grew much of the family’s food. “I’d can or freeze all summer long, mostly at night,” she said. The Jackson children helped in the garden, directed cars at Prairie Festivals, and baked cookies for social events and the institute’s many drop-in visitors.

Karen Black was an early Land Institute board member, and she remembers Dana planning events that built friendships for the organization with “good food, good wine, conversation, singing, and dancing.” Dana also helped present Wes’s ideas for

funding proposals. “They were very complementary to one another,” Black said. “They both worked terribly hard.”

Dana saw that to communicate regularly with supporters and prospects the institute needed a newsletter. She consulted a journalism professor, studied magazines, and talked to a printer about assembling a Land Report. In evenings she set copy of stories written by her, Wes, and students, using an IBM Selectric typewriter in Black’s law office, and laid it out with blue-lined paper and rubber cement.

Her editing was part of what Dana called a logical, practical division of labor for back-to-landers. “It was better for him to go out and build a fence,” she said. Their course for the institute was by taken by inspiration and response. “We learned every step gradually.”

By the late 1980s the institute’s young visitors were no longer students who paid tuition and pursued their own projects. “No more building an Indian house, no more building a newspaper house, no more windmills,” Dana said. Now interns earned stipends and conducted studies for The Land Institute. The organization had focused. Wes was convinced, as former Cal State colleague Chuck Washburn put it, that humans would not achieve sustainability unless they achieved it first in agriculture. Wes thought this would require farms modeled after natural creation’s soil-building mosaic of perennials.

Dana and Wes talked through key ideas. She pursued details. He would give her a 20-page manuscript and she would condense it. She said of the partnership, “We were doing this as a team in harness. We had our different roles, but we were exploring each new phase of The Land Institute together. We knew our path was unusual, innovative, out of the mainstream.”

Wes's second book called Dana "my partner and best friend for more than a quarter century."

But by 1990 they had separated as a couple. Dana spent a year at Harvard's Kennedy School of Government, earning a master's degree in public administration. She returned to The Land Institute for one more semester with interns, and then, in 1993, the Jacksons divorced. Dana moved to Minnesota, first working with the Minnesota Food Institute, and a year later becoming associate director of The Land Stewardship Project, another nonprofit organization campaigning for sustainable agriculture.

In the years since she left, The Land Institute has assembled a team of seven plant scientists with doctorates and assistants, built for them a modern research building, and seen its crop candidates sown in test plots on five continents. Though she visits friends in Salina, Dana has never returned to the institute.

She worked for the Land Stewardship Project from 1994 until 2012. Part of that job, too, was drumming up money. "I got so tired of writing thank-you notes," she said. She also launched a publishing arm and made national the organization's goal of ecological agriculture, Brian DeVore, current editor of the Land Stewardship Letter, wrote in an appreciation. Dana still advises the organization.

It wasn't her child, however, and she

said that after leaving The Land Institute, "The personal – the passion for creating – was lost." She tended this desire by persuading daughter Laura, now a biology professor at Northern Iowa State University, to write and edit with her a book called "The Farm as Natural Habitat." The job began in 1998 and took four years.

Dana continues other work, including for local food, the Wild Farm Alliance, and preservation of the St. Croix River, which marks much of the Minnesota-Wisconsin

border, and on which she still paddles a kayak. She helps a church committee addressing climate change. Here friends turn away from what they consider an impossible challenge. They speak about it apologetically. "Because they know I'm relentless and will fight on," Dana said. "I'd like the world to know I was intellectually and emotionally engaged with all my soul."

In her years at The Land Institute, the classroom fire was one of the most distressing events, and then led to the most exciting and enjoyable.

Friends came with saws and muscle, and with Wes and teen-agers Laura and Scott they raised and bolted together a new classroom building, while Dana and 8-year-old Sara cooked, served, and ran errands. Dana called it the epitome of the family enterprise. "We were all pulling together," she said. "I cooked a turkey and fed the whole crew. That was community and fellowship and the satisfaction of hard work."



Dana Jackson remains involved with local food, the Wild Farm Alliance, and preservation of the St. Croix River. Scott Bontz photo.



Nancy Vogelsberg-Busch grew up on a farm, but as third born and female, she was not raised to be a farmer. After study during 1976 in The Land Institute's inaugural class, however, a farmer she became and remains. Photo by Brown W. Cannon 3rd/Intersection Photos. The web site is brownncannon3.com.

She went back home to farm

The Land Institute's first class – and her father – inspired growing of organic beef

SCOTT BONTZ

In 1976 Nancy Vogelsberg was studying sociology at Marymount College, a Catholic school in Salina, Kansas. She also took classes across town at the Methodist counterpart, Kansas Wesleyan University. Bicycling between the campuses one day, she stopped in a park for water. A stranger at the hydrant asked what she was up to. When she returned the question, he answered, “Having an organic picnic.” She told him that her father was an organic farmer. “That was the word that joined us,” she said. “It was Wes. That’s how I met him.”

Wes Jackson told the young woman that he was beginning a school. She visited the place on his land south of town. She saw her first wind-powered electricity generator. She saw the Jackson family building a schoolhouse, their work not just idealistic, but physical. They were feeling their way to live more closely with the land and not go beyond what it could give. The Marymount student had already lived in a hogan with Arizona Navajos. The Jacksons further intrigued her. She became one of seven in The Land Institute’s first class.

During the morning at this new school, students sat on the floor and discussed assigned readings such as E. F. Schumacher’s “Small is Beautiful.” They talked of how to put theory into practice, and in the afternoon they practiced. The first job was to build an outhouse. Everyone helped. They

had to figure what do with shit, literally and figuratively, and to do so was humbling. Wes told students that humans are a little higher than the apes, and lower than the angels. “We’re not anything real special here,” said the woman who was Jackson’s student, and today is farmer Nancy Vogelsberg-Busch. “But we have a responsibility to take care of what we have.”

She had already lived with a Navajo woman who had no electricity or running water, and who dyed her wool for weaving with walnuts and onions. The Land Institute did not so much remake Vogelsberg-Busch’s view. “It validated it,” she said. She called life with the Navajos frosting on her cake, and time at The Land Institute the cherry.

She feels indebted to the Jacksons. “And especially to Dana,” she said. “I don’t know whether to cuss or kiss her. I’m here because of her. She got her hands dirty. She walked the talk. She raised her children there. She kept us grounded.” Vogelsberg-Busch had seen young Navajos not wanting to stay with the Navajo way, and she had thought about what happens when people lose their place. She said Wes and Dana asked their students, where else are you going to go? “They were coming back to it,” she said – the land.

Vogelsberg-Busch grew up in Marshall County, Kansas, northeast of Salina and bordering Nebraska. In conversation she repeatedly quotes her father, farmer John

R. Vogelsberg. “He never liked the word ‘organic,’ because it put him out there in left field,” she said. “My grandpa referred to his way of farming as ‘patch farming,’ small fields rotated with manure from the barn and cow lots. Dad liked to say, ‘Good farming practices.’” In the Philippines during World War 2, he had seen anhydrous ammonia sprayed to harden ground for airplanes. It was soon to revolutionize agriculture as fertilizer and upset the ecosystem’s nitrogen balance. She said that John’s horse farming, German Catholic father said, “I don’t want any of that junk on my land.”

Vogelsberg-Busch’s farm is certified organic. “What organic did for me was put me center stage, and give me a hell of a lot of paperwork,” she said. But it helps force her to keep good records of her herd’s genetics and her ecosystem.

After her semester at The Land Institute, she went to farm with her father. “I couldn’t do anything else but go home,” she said. Of her childhood she said, “I was not raised to be a farmer. I was not a male. But since I was the third born, as soon as I helped my oldest sister and Mom with house work, I could go outside and help Dad or run free on the farm.” Now, fresh out of college, young and optimistic, she saw opportunity, “Without really knowing what it was going to take. Which is probably good.” (Later during an interview, implying how the economy has changed and with the average age of US farmers past 55, she said, “I don’t know how young people are going to do it.” Vogelsberg-Busch is 60.)

“I was 22 years old when I rented land and started buying machinery,” she said. “And I saved money for eight years to have the down payment for the farm I bought in

1986.” This was 160 acres. Later she added 160 that her parents had acquired in 1960. It lies next to the land that her great-grandfather had homesteaded in 1878 and where she was born and raised. Three hundred and twenty acres total half a square mile.

Meanwhile, she married. “My dowry was the family milk cow,” she said. The cow’s name was Bossie. Vogelsberg-Busch said, “She actually lasted longer than the husband did.” As a track maintainer for the Union Pacific Railroad, “He was gone a lot, so I took care of the kids and cows; thus I was able to carry on when we divorced. Basically I got the mortgage and the kids.

And I got that cow.”

Vogelsberg-Busch’s farm today is all about organic beef. The brand name is Bossie’s Best, and she said, “Bossie’s blood line is still with me.” She began farming with corn, soy, wheat, and oat, but eventually quit growing grain to feed the com-

modities market. She wanted to get most of her land back to perennial grasses and legumes. “It’s all about the soil for me,” she said. “That’s where I stay grounded, literally.” As she spoke in late April, her fields of alfalfa, a perennial, sponged up a second day of heavy rain. The perennial crops, the woods that she has not plowed, and two streams helped make hers the leader when University of Nebraska researchers surveyed 27 organic farms for birds. The place had 59 species. “I just found that delightful,” she said.

Vogelsberg-Busch includes in her crop rotation one annual, oat, cut early to make hay. It’s easier than grain to feed the cattle, but is a food that they still relish. “Everything I raise on this farm goes to my

“I don’t get off the farm much, because I don’t want to.” *Nancy Vogelsberg-Busch*

cattle,” she said. The only nourishment that she buys for the animals are salt blocks and ear corn, the latter to serve customers who want more marbling in the meat than appears when cattle eat only grass and other pasture plants. The corn is organic, and picked in the ear, not shelled in a combine, so the germ is not exposed to oxidation before she grinds at feeding time the whole thing, kernels, cobs, and husk. She paid \$11.25 per bushel last year. “Fair trade for local organic corn!” she proclaimed. Her ground beef and hot dogs are 100 percent grass-fed. She will sell hot dogs at this year’s Prairie Festival at The Land Institute.

For slaughter and butchering she takes her cattle about 10 miles to Frankfort, Kansas, and that’s where customers must take themselves to buy the meat. She said people have asked her, “Oh, they have to go pick up their beef?” and she answers, “No, they get to.” During the interview she repeatedly wished for people who do not raise their food to appreciate the work it takes, and to value it fairly. She said this is for the sake of the farmer, and for the sake of farming that preserves the soil. “I am very fortunate to be able to price my product by direct-marketing my beef,” she said. Frankfort is about an hour from moneyed suburban Kansas City.

Vogelsberg-Busch also thinks that there should be more grace and thanks said for food. She feels blessed by her place. She considers her work a sacred practice. She thinks that the best way to make agriculture healthier is through properly designed farm program payments, including for the benefits of perennial grains.

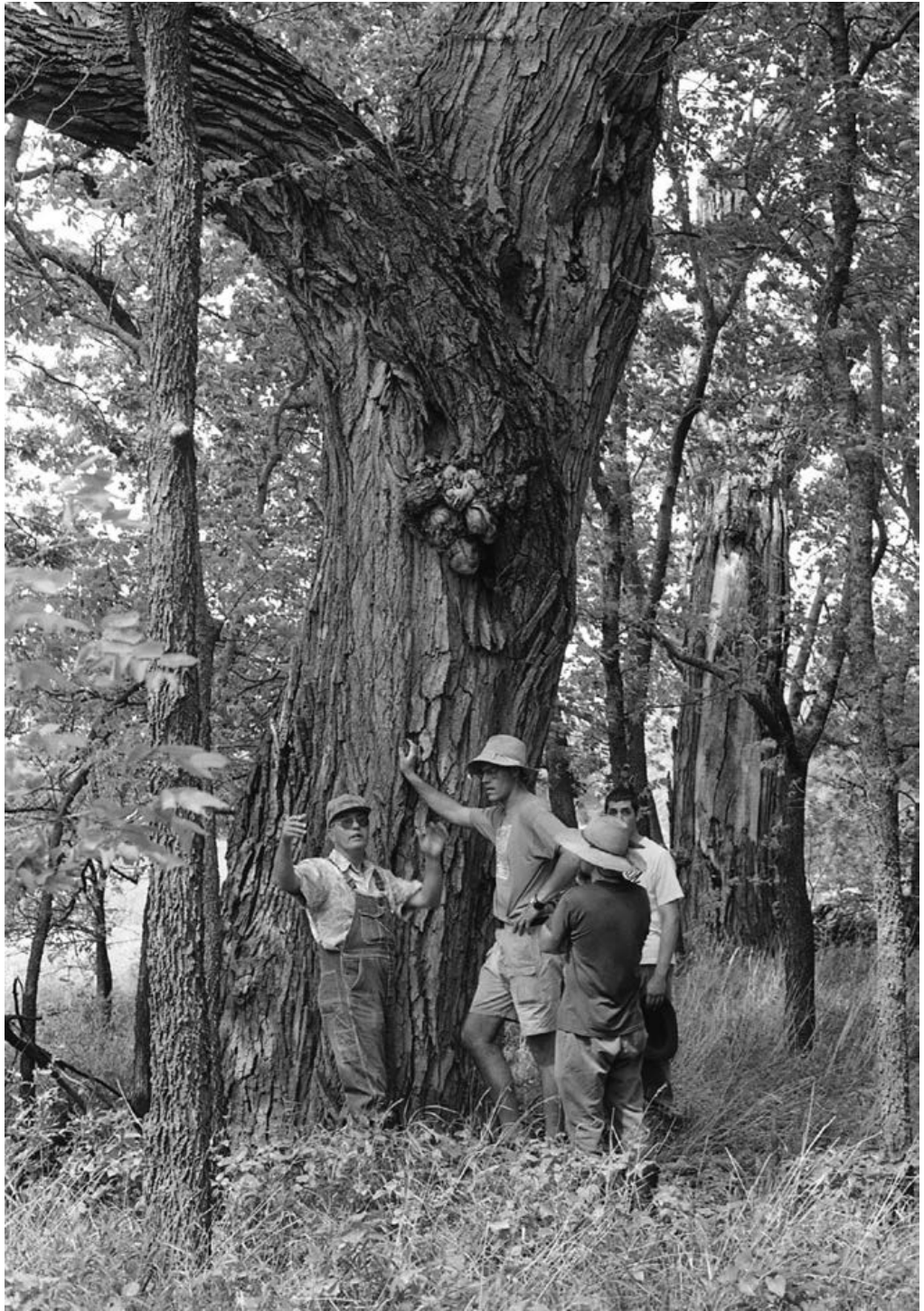
John Vogelsberg told his farmer daughter, “You never get it all done.” She will not live to see her farm perfectly modeled after nature. She uses a tractor, not horses. “I’ve adopted ways to take care of things,” she

said. And none of her three children is a farmer. But her six grandchildren visit and run around the place “like Comanches.” “I am grateful my kids were raised on this farm and like bringing my grandkids to the farm,” she said.

John Vogelsberg got an eighth-grade education, and his daughter said that in the one-room schoolhouse were no science books. But the teacher took the children for walks outside, taught them to identify plants and animals, and gave them experience. She thinks that education has suffered from the “great removal” from farming and its “down and dirty.” In the 1980s Wes brought the agrarian writer Wendell Berry to her farm, and John Vogelsberg came too. “This is what the three great minds were talking about: are we gaining or losing knowledge.” She said the consensus was that we were losing common sense. A recent rise in outdoor education gives Vogelsberg-Busch a sense of promise.

“I have built trails through the timber and along the prairie for them to play,” she said of her grandchildren, “but they also work with their parents, helping me fix fence, work cattle, grind corn, and cut, split, and stack wood.” She hopes that if they cannot raise food, that they will know to seek out farmers markets and to pay more than the asking price, if the farmers are doing the best they can for the soil.

She doesn’t often go to visit the grandchildren. “I don’t get off the farm much, because I don’t want to,” she said. “I never go to the Worlds of Fun in Kansas City. I just want to get my chores done and back to my porch.” But she doesn’t like the connotation by “chores” of unpleasant labor. “I call my chores my farm aerobics.” After heart surgery and two strokes, she tells her children, “Third better just be a clean kill.” She said, “I hope to die doing what I love.”



Robin Mittenthal, center, and two other Land Institute interns of 1996, Jerry Glover and Jon Richardson, with a farmer. Mittenthal went on to academia and work at farms, and now is starting his own.

The path to the berry farm

A Land Institute internship was part of what made one man want to grow things

SCOTT BONTZ

Robin Mittenthal is the son of a cell biologist who studied how limbs grow and a PhD social scientist who raised him and his sister while campaigning against nuclear weapons. His mother also took the boy to her garden. After earning his bachelor's degree from Carlton College, in Northfield, Minnesota, Mittenthal went to The Gambia, in western Africa, to work for social change among subsistence farmers. The Peace Corps gave him jobs that for Gambians were implausible. The people were smart and hard-working, he said, but lived close to the edge, with no safety net. They could not take a risk on something like mango grafting or running a woodlot. The young American left disillusioned about prospects for international development.

Though raised in the “epicenter” of corn and soybean farming, Illinois, and having fiddled in his mother's garden, it was in The Gambia that Mittenthal grew interested in agriculture and growing things. Farming was more productive than gardening, and it could be profitable. “It was very eye-opening to see that,” he said. And one of his Peace Corps agroforestry projects, though difficult, was not impossible: trees that fixed nitrogen, in a place where farmers couldn't afford fertilizer.

This fit something he remembered from Carlton College. Guest speaker Wes Jackson had promoted perennial grains

grown in species mixture that would include nitrogen-fixing legumes. In Africa, Mittenthal said, “I was certainly chewing on Wes's idea.” Coming home he remembered Jackson's Land Institute, investigated, saw that interns were sought, and won a spot in the class of 1996, one of the last.

As an intern he helped institute scientist Jon Piper plant up to 16 species for exploration of how prairie-like mixtures might work to make grain. He helped scientist Marty Bender compare how energy goes into and out of an industrial farm and one running on sunlight, with horses and legumes rather than tractors and synthetic nitrogen. He wrote a guide to local and alternative food sources in the institute's hometown, Salina. He and the other interns shared maintenance chores.

Mittenthal also read under institute Education Director Brian Donahue, who now teaches at Brandeis University in Waltham, Massachusetts, and serves on The Land Institute's Board of Directors. Donahue books include “Reclaiming the Commons: Community Farms and Forests in a New England Town,” and Mittenthal liked how deeply he thought about how humans have occupied their landscapes. He covered history geologically. He conveyed a sweeping view of soil erosion. Mittenthal had already lived and worked in Africa, but Donahue's rigorous, international reading assignments broadened him. He said it's easy as a young

person to not see how much the world varies from your home.

The internship also taught Mittenthal something about himself. He took to showing visitors around, and his tours of The Land Institute eventually numbered in the dozens. “I had never realized how much I liked pontificating, and explaining complicated stuff,” he said.

Years later he finally saw something else about himself: he would not make a good scientist. “It took me a BA, two master’s degrees, and four years of a PhD to finally understand that I am more interested in just doing stuff – e.g., farming – than I am in writing/thinking about stuff – e.g., how to make farming more sustainable” he wrote in a follow-up to a telephone interview. “I still think about stuff – I think about how to run my own little farm sustainably.” But he thinks himself too much the intellectual dilettante for academia. He said, “The term ‘generalist’ might be kinder, but ...”.

Mittenthal’s farm in the making is Little Mammoth Berry Farm, four and a quarter acres near Belleville, Wisconsin. The land had been in rotations of alfalfa with annual crops. A soils map calls erosion at the place moderate to severe. There aren’t many soils with any slope that don’t erode under annual crops, Mittenthal said. Even before coming to The Land Institute he hated to see this. “I always enjoyed perennial plants,” he said – watching them leaf out without need of replanting. They aren’t without care, but they don’t require so much weeding and planting.

His farm’s blueberries and raspberries are perennials, and in that way they tie him to The Land Institute. The connection

includes thinking long ahead. Developing new crops takes decades, and reaching full production for berries might take 10 years – though blueberries can then grow for 50 or more. “There’s a reason there aren’t lots and lots of berry farms around here,” Mittenthal said. But he expects some early return, and he has another job. He also will plant clover and grass between the berry rows, and possibly flowering forbs, all to attract and support pollinators, and possibly to sell flowers. In his garden in nearby Madison, he counted

more than 15 species of bees and other pollinators. The farm is within sight of the Ice Age Trail being built along the southern edge of glaciation in Wisconsin. He can see a moraine left by the grinding. He could imagine

mammoths and mastadons. When he sketched a mammoth by a larger image of a berry, his 4-year-old girl and 7-year-old boy loved the juxtaposition – hence the farm’s name.

Mittenthal, 42, is part adviser, part administrator for a University of Wisconsin program that awards a certificate – what some schools would call a minor – in global health. The program emphasizes that many poor, tropical places demand skills largely unbeknownst to rich countries of the North. Most people in the world never see a doctor or sanitation services, Mittenthal said. “Their health depends on what they eat and what’s in it.” He thinks he got the job because of his experience with agriculture. He also has taught high school and college students.

He tells students who are interested in the Peace Corps that obstacles are profound in places unchanged for hundreds of years and where people can barely survive. What

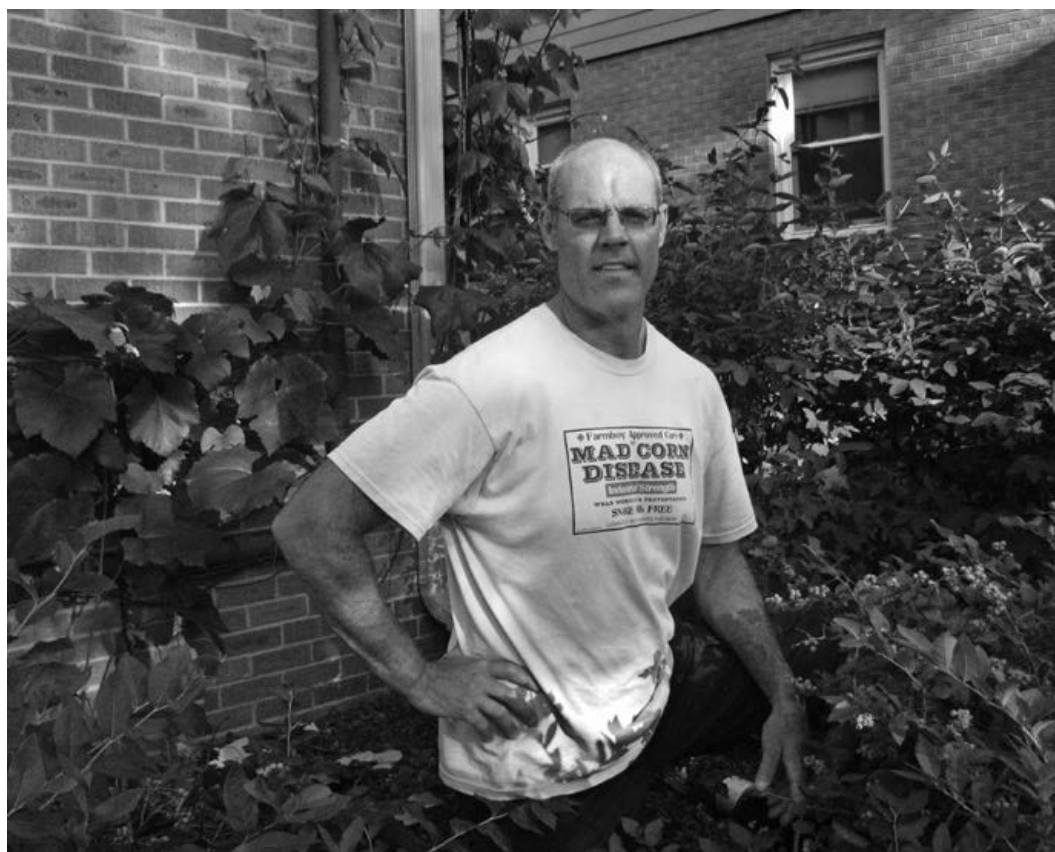
“I always enjoyed
perennial plants.”

Robin Mittenthal

these people need to enjoy the freedom of experimentation is something that the Peace Corps can't give them: slack. You won't change such a community, he tells students; the main benefit will be to yourself. "Take a different attitude than the Peace Corps tells you to take," he says.

Mittenthal enjoyed slack at The Land Institute, even from draft-horse driving farm manager Jack Worman, who saw Mittenthal as ignorant about matters such as hand tools. "He thought I was full of shit, but was very supportive," Mittenthal said. "I felt and still feel very fondly about The Land Institute." He would like to visit more, but said, "Life has intervened."

Back then, Mittenthal and other interns could chide Jackson for what they saw as inconsistency: The Land Institute president was wearing overalls, looking his most folksy, but would soon make another trip by jet and pile onto his carbon footprint. Jackson responded with argument for the need to spread the word and mobilize the troops. Later, in argument for organized, political action instead of individuals haphazardly getting back to the land, Jackson would say, "If you walk the talk, you'll never get there." When Mittenthal heard this, he laughed, and offered a Chinese proverb: "The best time to plant a tree was 20 years ago. The second best time is now."



Robin Mittenthal today, with perennials in Wisconsin and his "Mad Corn Disease" T-shirt. Daniella Molle photo.

The ecosphere constituency

Wes Jackson's hopes for The Land Institute and how people see the earth

SCOTT BONTZ

Wes Jackson was 40. He had the strength to build a two-story schoolhouse with salvaged electricity poles, and to deliver there a college-level education that brought together hands and head. This was to radically power down civilized life and curb industrial-strength wear and tear on the earth. He had resigned from a tenured position at a California university and come back to Kansas, back to the land. And, he said, "I kept thinking, 'Any fool can quit his job.'" But in the early days of this new venture, The Land Institute, he would fall exhausted into bed and think, "This is crazy. We can't do it." Then in the morning he would rise and think, "We can't be stopped."

Within a year the geneticist had an idea more focused and more radical. Other scientists saw this idea as a biological dead end. They said one couldn't make a perennial grass shift its energy into productive and edible grain without gutting the roots that had made it perennial. "There were a lot of periods of doubt," Jackson said – though one might not have guessed that from his public face. From knowledgeable peers, "There was just not much encouragement." A smattering of scientists were interested. But Jackson knew he appeared a renegade, and he sensed an overall dismissiveness.

Among encouragements was knowing that trees can devote to fruits and nuts

a similar proportion of their total growth as modern annual grain crops can to their seeds. Jackson said that for critics, "What I should have done is pound harder on that theme: what about trees?" Also, he said, "I kept coming back to that prairie." Here was an ecological system of perennial grass, legume, and forb species that could equal or better a one-crop farm field in total above-ground growth – stems, leaves, and seeds. Farmers for millennia and scientific breeders for a century had coaxed annuals to shift more sun power and nutrients into their seed without harm, as long as the plants could enjoy domestic farm life rather than wilderness hurly-burly. With modern genetic knowledge applied, why couldn't herbaceous perennials also take a new course?

The dark spur for Jackson was seeing how agriculture continued to lose soil under domination by annual grains, despite decades of scientifically informed conservation work by the government and farmers. He read histories of farming's abuses, including "Deserts on the March," by Paul B. Sears; "Tree Crops," by J. Russell Smith; and the writings of soil conservationist Walter C. Lowdermilk. He noted how this ecological devastation had come during just 5 percent of the history of the species with the big brain, when it got to "living out of context" with its natural economy.

Now The Land Institute is 40, with Jackson on the verge of leaving its presi-

dency, though not its work. And now, as a result of the institute's progress, other scientists validate the possibility of perennial grains, and of their need. Jackson said that of all that has happened during the past four decades, this vindication and the research funding it brings are the most encouraging.

Also important to him has been support from friends. The first of many names he thinks of are other agriculturalist writers,

including Maury Telleen, David Kline, and Gene Logsdon. (For Logsdon's obituary see page 34). "The early and sustained friendship of Wendell Berry has been right there at the top," Jackson said – the friendship plus "insights and useful language that I could never have come up with on my own." He knew his friends supported him, even though, he said, "I don't know what they were thinking."



Wes Jackson, center, Aubrey Krug, and Bill Vitek led educators this June in talks of how to change the dominant worldview, from seeing the earth as building material to recognizing it as creator of humans and all other life, through time and complexity impossible to fully command and dangerous to take apart. Jackson will step down after 40 years of leading The Land Institute, and work to promote this ecosphere education. Scott Bontz photo.

Jackson first estimated that achieving an agriculture modeled after nature, with perennials grown in species mixtures, would take 50 to 100 years. Now it appears that one of the crops in development, intermediate wheatgrass, might be profitable by the end of this decade. "I think we can say we're ahead of schedule," he said.

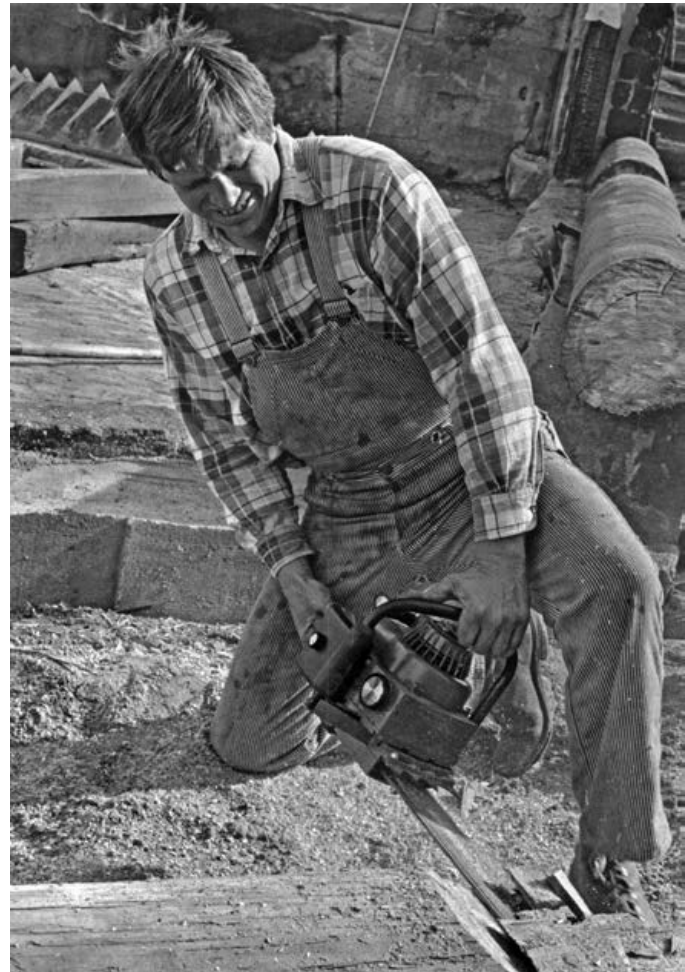
Progress accelerated in 2000. The surge took more than two decades partly because researchers starting from scratch had to evaluate dozens of species and thousands of plants. Add to this the need to accumulate results and build a reputation, to score the money for more research, and to keep the researchers. Jackson flew and drove hundreds of thousands of miles and made hundreds of engagements to spread the word and develop a constituency. "It's kind of like the growth of human population," he said of the time to change. "For millennia the curve is pretty flat."

Foundation commitments finally lifted the salaries for Land Institute researchers from a league far below what they could have earned at universities. Now he worries about people being attracted more by salary rather than by an idea. But the money is quickly expanding the work, including collaboration with researchers on five continents.

He wants to see The Land Institute develop more perennial species as crops, and work more on ecology and soil science. Its new crops number only half a dozen, and it enjoys only one ecologist. Jackson also wants to begin research of managing perennial grains like a prairie, with fire and grazing. In his last year as president he has hired building of much fence, "To get into the rhythm of having cattle."

Jackson is scheduled to leave the presidency October 1. He cannot imagine retiring, but he wants to work with fewer travels,

anxieties, and disruptions. He said this during an hour-and-a-half interview interrupted three times by phone calls, one of them from an institute board member, one from the president-select, Fred Iutzi. (For Iutzi's story see page 28.) Jackson will keep his office in the walkout basement of the classroom building that he, family, and supporters put up after fire razed the original and nearly



The Land Institute's schoolhouse burned six weeks after classes began. Wes Jackson and friends rebuilt it, and supporters, many of them unasked, sent money and books for the institute to carry on.

killed the six-week-old institute in 1976. “What I intend to do is keep this space as my space, to continue to read and to write, and not have to be raising so much money,” he said. He might try to write an outline for a history of The Land Institute, drawing on what he called knowledge of many small but important things. But he said, “I don’t want to do a memoir.”

Foremost in his plans is assembling a curriculum for something to be called either ecosphere studies or ecospheric studies. What he will not use is the popular current name, “environmental studies.” He thinks “environment” is vague and connotes something outside us – he quotes the title of an essay by J. Stan Rowe: “What on earth is environment?” Jackson thinks it crucial that we recognize ourselves as part of a whole that is the only truly creative organization. “Out of the physicality of early earth minerals and gases turned into cells,” he said, and the ecosphere’s creative evolution goes on. He must find writings that fit this view, and which cover the basics necessary for getting others to see it.

In June the institute held a second annual gathering of people to develop this curriculum and begin teaching it. Jackson spoke of the virtual world religion of the growth economy. The earth, the ecosphere, cannot admit infinite growth, but the human economy blinds itself to this with what Jackson calls technological fundamentalism. He sees that as far worse than any other fundamentalism, including Islamist. “Because it comes with the milk,” he said. He compared environmental studies to the work for black civil rights before the crucial steps of Martin Luther King to recast society’s foundation.

In the interview, he talked of taking care about asking broadly for this kind of conceptual shift, because most people sym-

pathetic to The Land Institute mission cannot be plant breeders, ecologists, or soil scientists. They can garden, buy locally, and eat organically. This is all good, but not enough. “These folks have the ethic, but seldom the wherewithal to adequately get behind the necessary policy for change,” he said. “And the policy folk with little experience in the garden lack the necessary energies of transcendence.” Jackson recognizes such activists as the core of the institute’s constituency, he likes them, and he thinks they are the ones with the necessary good examples to help with policy change. But in 40 years of tending his own garden, The Land Institute, Jackson said, “We’ve not brought down the hammer enough about the seriousness of the problem.” Soil erosion tears on, human population balloons, and fossil energy supplies taper, posing great danger of hunger and conflict.

He wants to see more scientists publish fewer papers about fine-tuning and more about conceptual shifts. This is what will be needed to confront erosion of the irreplaceable soil that feeds humanity, and the effects of pesticides and other industrial chemicals foreign to life’s evolved chemistry. With ecosphere studies, he said, “I’m hoping that we can ask harder questions, ones that go beyond the available answers, and also be thinking about policy.” He most wants to build for the ecospheric worldview a constituency.

At the ecosphere studies conference, on his 80th birthday, Jackson told educators that even for all of The Land Institute’s work, “We played it safe. And we’re still playing it safe.” The research progresses, but ecological destruction and species extinction grow worse. “We’re losing, and we’re losing fast,” he said, and presented this as his greatest regret: “I haven’t been radical enough.”



Fred Iutzi will become president of The Land Institute on October 1. In June his office was still to be remodeled, but he said, "I will have the luxury of maintaining momentum rather than building from scratch." Since serving the institute as a graduate student, he has helped co-operatives of farmers and rural businesses. Scott Bontz photo.

The president-select

He works for farmers and rural community, and he knows The Land Institute

SCOTT BONTZ

In the late 1990s, The Land Institute stopped bringing young people, often college undergraduate students, to work on development of perennial grains in house. To better permeate universities with its ideas for agriculture and gain help from the schools' research, it started awarding fellowships and funding to graduate students across the country.

In 2002 one of the new grad fellows was Fred Iutzi, who grew up on a farm in Illinois and was working toward a master's degree in sustainable agriculture and agronomy at Iowa State University. For his fellowship Iutzi (pronounced YOOT-zee) sought the best form of small grain – wheat and a derivative, triticale – to grow mixed in with forage legumes. A legume could replace synthetic fertilizer by naturally fixing nitrogen to benefit the grain plant, as long as the grain plant didn't rob the legume of sunlight. Iutzi's study fit The Land Institute's aim to not just make grain, legume, and oilseed crops perennial, but to grow them together, more like natural systems such as prairie. This will not only cut erosion, but diverse root neighborhoods will cycle more water and nutrients.

Iutzi, other grad school fellows, Land Institute scientists, and guest speakers convened that summer to double the population of Matfield Green, a rural town in the Kansas Flint Hills where the institute had renovated a schoolhouse. For most of

a week, in classrooms during the day, and around kegs into the night, attendees talked about perennial grains, polycultures, science, academe, economics, philosophies, and religion. Land Institute President Wes Jackson escorted them to a height in hills then at peak green growth, and he painted how different the place looked to explorer Zebulon Pike in 1806, with bison, elk, and panthers, and how not so different it looks now, with perennial mixtures still feeding big ruminants, in the form of cattle, to make protein with almost none of the fossil fuels consumed by industrial grain agriculture and feedlots.

The atmosphere for thinking at the annual gathering was what Jackson would call yeasty. And although fellows typically completed their work in one or two years, some kept coming back to Matfield Green. Iutzi might hold the record for number of workshops attended: seven. "I wondered in the latter years if I was being self-absorbed," he said. But he loved the camaraderie and the intellectual charge. "Ultimately it turned out that it was good for something other than self-gratification."

He got to know The Land Institute and its work very well. After graduating from Iowa State he moved back to the family farm and learned how to operate an institution that helps rural community. And when Jackson decided to step down after 40 years of running his institute, one



In The Land Institute shadehouse grows silphium, an oilseed crop candidate with deep roots that build and bind soil, and draw the plant through drought. It and other perennials prevail on unplowed landscapes. Fred Iutzi writes, “It follows that sustainable economies or societies pretty much need to literally be based on perennials – otherwise anything we do to promote right livelihood and justice will be constructed on shaky ground.” Scott Bontz photo.

of those approached to step up was Iutzi. A search committee with three institute board members and two institute employees recommended him unanimously. The board's approval also was unanimous. Iutzi, his wife, their infant girl, and 4-year-old boy will move from Illinois, and he will become president on October 1.

Board Chairman Angus Wright said Iutzi fits The Land Institute because of his vision for a "more just and sustainable agriculture." In addition to wanting to see The Land Institute reform agriculture, Iutzi said he wants to make healthy traditional family farms and rural communities. He wants farmers to not need outside jobs. He wants a new wave of people to be able to farm, including in cities. He also wants farm policy to consider the global South, without farming in the industrial North "squashing everyone else in the process." Agriculture needs to be practiced thinking of justice outside of agriculture, he said.

Iutzi grew up on a farm near Elvaston, Illinois, a few miles from the Mississippi River at the state's girth. Now he lives about 12 miles north, at another farmstead in the family's thousand-acre operation. He works in Macomb, a city of 20,000. Different sides of the family have held both farms for generations. A great-grandfather farmed the land where Iutzi grew up; a great-great grandfather farmed where he lives now.

On the farm he faintly remembers cattle, possibly his grandfather's hobby. When Iutzi's father took over, the cattle left. The economic mainstay, typical for Illinois farms at that time, was hogs. The family also raised corn, soy, and oats. "My parents started me on helping with hogs first, probably because I couldn't reach the clutch of a tractor yet," Iutzi said. When an early teenager he began helping raise crops, with

tillage, planting, and harvesting. He is just old enough, 37, to remember killing weeds by cultivation rather than solely with herbicides. In the 1990s big business drove hogs off of small and middle-size farms. For two decades Iutzi crops have been reduced to corn, soy, and a little wheat.

With the economic changes Iutzi's mother began earning additional money off of the farm, first as a reporter and now as managing editor of the Daily Gate City, across the river in Keokuk, Iowa. Cindy Vick grew up mostly on the East Coast and had no farm experience other than visits to her grandmother in Illinois every other year. There she met Rod Iutzi at church. She saw him again later at a bar, when he invited her to a farm sale. Amid rain, sleet, and lightning, they talked over coffee in the machine shed and Rod missed the equipment he was supposed to bid on. "A year or so later we married," she said in an e-mail interview. "I became a card-carrying, tractor- and combine-driving, pig-pulling, parts-getting farmwife. Never did much like cows, but really enjoyed pigs. I also observed that not many girls who were raised on farms married farmers. Hmmm."

The couple raised Fred, the first born, and Russ, who lives on the farm about 100 feet from Fred and works for a grain elevator company. Cindy Iutzi said that as a boy Fred had a gift for articulation, a rich vocabulary, a sharp intellect, and "a good (my) sense of humor." "He turned out to have a great memory and a sense of presence I was pleased to be able to witness at a play he was in during his senior year of high school," she said. "He and I talked a lot when he was little and discussed weighty matters. Neither Rod nor I dumbed stuff down for either of our kids."

Rod Iutzi said the family often subscribed to several newspapers. They sat

“Perennials are also a tremendously powerful metaphor for the broader changes needed in our society.” *Fred Iutzi*

around the table together and read sections of *The Wall Street Journal*, the only national daily that regularly covers agriculture. Mostly they read to themselves, but rare was that day that a story didn't raise comment. Fred said he also read “standard kid's stuff,” including mysteries and westerns. “I think I plowed my way through lots and lots of fiction,” he said.

He attended public school through his freshman year in high school. As a sophomore and junior he was away from home in Aurora, west of Chicago, to attend the Illinois Math & Science Academy. There he met Melissa, who is now his wife. For his senior year he went to a Catholic school.

In the 1980s and 1990s of Iutzi's childhood, the prospects of farming appeared grim. He always assumed he'd do something else. He began at the University of Missouri as a history major. Then he learned how geography integrates sociology, economics, biology, and geology, considering people, the landscape, and geology all together. “That was a better home,” he said. A student can make such an interdisciplinary approach elsewhere, but with geography, “It was all baked right in.”

Serving an internship with the National Geographic Society in Washington, DC, like many young professionals he worked in a cubicle in an office building in an arbitrarily selected city. There he meditated on rural life, and coupling this with his study of geography, pivoted back toward agriculture. “I was looking at it as an adult instead of as a child,” he said. He saw that his role could be active rather than passive.

He began reading about the sustainable agriculture movement. A friend told him about The Land Institute and Wes Jackson.

From there it was to Iowa State and his Land Institute fellowship. An outline of what he took from those experiences begins with this headline: “It's the perennials, stupid.” He said soil is the keystone for an ecosystem, perennials are key to deep, fertile soil, and they prevail on landscapes before settlement. Frequently disturbing ground to crop annuals makes keeping soil healthy – and keeping it at all – a constant, usually losing battle. “It follows that sustainable economies or societies pretty much need to literally be based on perennials – otherwise anything we do to promote right livelihood and justice will be constructed on shaky ground,” Iutzi said.

“Perennials are also a tremendously powerful metaphor for the broader changes needed in our society. ‘Some seeds fell on rocky ground, where they did not have much soil, and they sprang up quickly, since they had no depth of soil. But when the sun rose, they were scorched; and since they had no root, they withered away.’ So many aspects of our economy are based on that which springs up quickly, and ultimately has no root, or minimal root. For sustainable economies, we need to take our time and plant the right seeds in the right soil. This may involve investments – in locally owned businesses, for example – that do not offer maximal rate of return over the short term, but that will ultimately support a community over the long haul.”

This goes with what Iutzi is already doing. He and Melissa moved back to the

farm 11 years ago. They thought of this as the start of transition to farming. But success at white-collar jobs and volunteer work held them. (In Salina, Melissa, a registered nurse, will teach at Kansas Wesleyan University and serve as a volunteer consultant and deaconess for United Methodist Church.) Iutzi has had little time to help on the family farm other than occasionally scout for signs of pests, weeds, and soil crusting over seeds before they can sprout. His paying job has been with the Illinois Institute for Rural Affairs at Western Illinois University. He helps people start cooperatives, which band together farmers and rural small-business people for the economic advantage of scale. Iutzi's team also presents help such as publications and advice for co-op structure and legal points.

Rural businesses, especially in small downtowns, are failing. A town's people bemoan the loss, but once they get used to buying at big-box stores in larger cities, it's hard to bring them back. Iutzi proposes that co-ops get people to put their money where their mouths are. If the co-op structure can make people not just shoppers, but also members and owners, their behavior might change. "Maybe you'll want to steward your investment," he said.

This kind of change could be considered incremental. Iutzi said to survive for long in a desirable fashion, "We need to make massive changes in the way that we interact with nature and each other. And some of those changes – like putting some kind of brake on climate change – we really need to jump on quickly." But he said that plotting big changes like The Land Institute's goals is risky. He didn't mean the risk of winning grants, but of losing touch with the day-to-day world, "the risk of pontificating with pastoring," to founder for lack of under-

standing. Each step in organic farming, each tweak in national energy policy can nudge people toward need for bigger change. "The really key lesson is that major change makers and incremental change makers need each other," Iutzi said. "My hope is that The Land Institute, while it is directly crafting the tools that are needed to drastically reshape perennial agriculture, can set a north star to help the rest of the movement steer towards the long-term goal. As somebody who has worked in incremental change on both production agriculture and economic development fronts, I can tell you that having a major change goal makes all the difference."

So he worries about staying grounded at The Land Institute. But Iutzi, who is three years younger than Jackson was at the institute's birth, "This is truly an opportunity suitable to build a life's work around."

"I will have the luxury of maintaining momentum rather than building from scratch," he said. Now the organization is not so much the vision of one person, but of a community. He thinks people will see him often listening and observing. (Though Jackson is kidded about how often he must get in a word, Iutzi called his predecessor a good listener.)

As a Land Institute graduate fellow Iutzi did not find the best variety of grain crop to grow with a forage legume and see them both thrive. His study was only two years, and he could test only a small fraction of the world's wheat varieties. He thinks that taking such exploration further might be one of the main jobs of farmers with perennial polycultures, and that conclusions will depend on each farmer's home place and hope from the crop mix. "Maybe the difficulty of simultaneously optimizing for all components is in fact why we need farmers," he said.

Gene Logsdon, homecomer

ALAN GUEBERT

N ight has day, up has down, and Hugh Grant has Gene Logsdon. Monsanto's Hugh Grant, as almost everyone in Big Ag knows, is chairman and CEO of the world's premier agricultural seed company now hotly pursued by German chemical giant Bayer AG. Writer and journalist Gene Logsdon, as almost no one in Big Ag knows, was the "Contrary Farmer," an Ohio-based "cottage farmer" with 32 acres of trees, garden, a rotating collection of live-stock, a patch of corn, and "about 593,455,780 weeds." He also authored 25 books of nonfiction, four of fiction, and thousands of magazine stories and blog posts mostly on what he called "the good life on your own piece of ground."

What this prolific master of American letters and this titan of global ag business have in common is their oppositeness. Grant runs a huge enterprise that gave the world Roundup and genetically modified crops; Logsdon ran a tiny farm that grew open pollinated corn and fed his writing. Their oppositeness came into focus when, on May 27, Reuters reported Grant would "walk away with a total package of more than \$123 million" if Bayer's \$65 billion offer for Monsanto was accepted. Four days later, Logsdon, weakened by lymphoma, died in his beloved Ohio, poor in pocket but rich in the satisfaction that he had lived most of his life exactly as he hoped on the farm he and wife Carol had spent 50

years making – by today's often violent, scientific standards – perfectly imperfect.

He wrote about that life because writing was his life. In fact, Gene – he was Gene, never Eugene, to everyone – filed his last story on his website, *TheContraryFarmer.wordpress.com*, just six days before he died. It was pure Gene, another gentle jab at convention titled "Gardening In The Nude (or New Use For Rhubarb)."

He started his career, he once explained, at the top – as a staff writer for *Farm Journal* – then steadily worked his way down. He happily joined the Philadelphia-based magazine only to discover he hated city life, its long commutes, and what he called 9-to-5 "wage-slavocracy."

"My anger," he wrote in his 1998 memoir, *You Can Go Home Again*, "kept me writing. I would write my way back to open country. But I didn't know if I could do that.

How did a person know if he was writing something good?"

What he did know troubled him. "Poor writers with families to feed did not write for themselves, nor for readers, nor for the ages. We wrote for editors." That meant he had to do stories editors liked and he might hate in order to do stories he liked and his editors might hate. Those rare chances, however, changed him and changed ag journalism.

One centered on Pennsylvania's family of painters, the Wyeths, who lived on a



Gene Logsdon, in a photo by Ben Barnes

farm and believed you “had to know a place deeply in order to draw art from it.” Gene came to long for that place, that “home.”

Another story was inspired by a 1971 book of poetry titled “Farming: A Hand Book,” by a Kentucky writer named Wendell Berry “who had gone back home from the glitter of New York to make his solitary way.”

Again, home.

Another Farm Journal story marked Gene’s break with convention. It was “The Last Farmer,” a 1975 satire that outlined the fictional career of farmer “Marvin Grabacre” as he took the “get big or get out” philosophy of 1970s agriculture to its perfectly

absurd conclusion: he farmed all of the US by 2051. Shortly thereafter, an unexpected royalty check became the down payment on the small-acre, Logsdon farm near Upper Sandusky, Ohio. Gene and Carol went home, finally, and there, now, he will forever stay.

His books, stories, and unshakeable belief in “home” will live forever, too, because our need to belong, our drive for a place in nature, is equally eternal. As such, Gene Logsdon will be better known a century from now than any corporate folly invented by man.

Originally published in the writer’s syndicated agriculture column, “The Farm and Food File.”

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Fred Iutzi, who will become president of The Land Institute in October, and his daughter, Maria. See inside for the story about Iutzi's background and thoughts, as well as stories about the institute's 40-year history and its future. Scott Bontz photo.