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Abstract
The story of the ISU Agricultural/Agronomy Research Farm starts with the Iowa State University campus. Iowa State University began as the Iowa Agricultural College and Model Farm with the act of the Iowa Legislature in 1858. After a competition between several locations across Iowa, the Story and Boone Counties delegation proposal, valued at $21,355, was accepted. Story County was on the edge of the frontier. The county had only been organized for five years, had no railroad, and was "reputed to be unusually swampy." The campus was acquired as a prairie site of 648 acres near the Story/Boone County line near the Nevada to Boonsboro stage line. A Fourth of July celebration on the site had a toast to "The Rising Generation, the Hope of the World, and a Mighty Sure Crop in the Hawkeye State!" The first building, the Farm House, was built in 1861 and the first class enrolled in 1869.

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The story of the ISU Agricultural/Agronomy Research Farm starts with the Iowa State University campus. Iowa State University began as the Iowa Agricultural College and Model Farm with the act of the Iowa Legislature in 1858. After a competition between several locations across Iowa, the Story and Boone Counties delegation proposal, valued at $21,355, was accepted. Story County was on the edge of the frontier. The county had only been organized for five years, had no railroad, and was "reputed to be unusually swampy." The campus was acquired as a prairie site of 648 acres near the Story/Boone County line near the Nevada to Boonsboro stage line. A Fourth of July celebration on the site had a toast to "The Rising Generation, the Hope of the World, and a Mighty Sure Crop in the Hawkeye State!" The first building, the Farm House, was built in 1861 and the first class enrolled in 1869.

Early fieldwork on the Iowa State campus. The Iowa Model Farm was operated as primarily a demonstration site until 1888 when the Iowa Agricultural Experiment Station was established, funded by the federal Hatch Act. The Hatch Act was authored by Seaman A. Knapp, an agricultural professor and later first dean of the agricultural college at Iowa State College. He was frustrated with Iowa legislators who would not fund agricultural experimental work. The process of converting the college farm to experiment station began. The Hatch Act generated stable funding for agricultural research and resulted in organized experimentation. The results of the research became the foundation of the agricultural curriculum and later the basis of extension programming to farmers. Winning the farmers over to scientific research proved more difficult. Farmer discontent was widespread and their discontent over "book farming" erupted in controversy during the 1890s.

The controversy is well documented in ISU history and brought William M. Beardshear, James "Tama Jim" Wilson, and Charles F. Curtiss to the agricultural college. These men were backed by farmer groups statewide.

The Experiment Station caused more research plots to be planted around the campus. For example, according to Johnson, "The 1903-04 Iowa State College catalog describes experiments located on the college farm. Experiments included corn planter calibration, sewage irrigation, drainage, and windmill power." Campus fields used until 1934 included land north and west of the Armory.

The original State Avenue Agronomy Farm 1915 to 1963. In 1914, land (163 acres) was purchased in Section 20, Washington Township, Story County about two miles south of campus for agronomic plot work. The farm was about a half mile south of Dean C. F. Curtiss' personal farm, known as Rookwood (now the ISU Curtiss Farm), where he raised Shorthorn cattle, Berkshire pigs, Percheron horses, and Collie dogs. Curtiss had owned this farm since 1904. Ag Engineering moved to this area with the lease and later purchase of additional land in 1928 and 1934, respectively.

On the Agronomy farm, the existing buildings were in poor condition. Improvements were made including a two story seed house, a corn

crib, a residence, and a new headquarters tile field laboratory (barn) that measured about 115 ft × 65 ft and included a south wing for machinery storage and a stairway to an upstairs room. The structure continues to be used today by the Animal Science department as the headquarters of their teaching farms operations. The barn and buildings were located in Section 17 on State Avenue (also 520th Avenue) north of the plot fields in Section 20. Additional land was purchased in 1926 (10 acres) and 1935 (40 acres). In 1934, about 200 acres were purchased south of the Agronomy Farm for a new Agricultural Engineering Farm. Plots continued near the campus until the late 1920s and early 1930s.

The farm superintendent lived on the farm and was key in managing the many plots. The last superintendent was Charles N. Brown (aka Brownie). He was popular and meticulous. According to Pesek, "Brownie was a careful worker in the experimental plots, taking great pains to make sure the treatments were correctly applied and the operations were as nearly perfect as he could make them. To this end, he was the only one who he trusted in planting, at least the corn plots, that required precise driving of the team of horses and careful alignment of the planter and the dropping of the seed according to plan."

Need for a new research farm. As early as 1940, the need for a new farm was evident. Efforts in the 1940s and 1950s focused on establishing experimental fields or farms in other major soil areas of the state. With expansion of crop breeding, more land near Ames was needed. In 1951, it was apparent a new research farm was needed to replace the old farm on State Avenue.

By the 1950s, the advent of fertilizer, pesticides, advanced crop breeding, and ag mechanization was causing a rapid expansion of agricultural research. The earlier experimentation with lime or fertility treatments caused many areas on the old farm to be unusable for research. The farm shop facilities were increasingly inadequate for the ag engineers from ISU and USDA. The consensus on campus and across the state was that a new agronomy farm was needed.

The drive for a new Agronomy Farm. In 1954, the Iowa Crop Improvement Association's Legislative and Research Committee felt a new agronomy farm was desperately needed. They recommended a committee be appointed to "study and explore the possibility of setting up a holding corporation to sell shares for the purpose of purchasing a farm to be leased to Iowa State University for the use of the Agronomy Department." These agricultural leaders believed the need for new land for experimentation was so "urgent" they could not wait for the legislature to enact funding legislation. In all of these efforts, the term "new Agronomy Farm" included a portion for a new agricultural engineering research site, however the leadership and the dominant portion of the new farm was agronomy-related.

In 1956 and 1957, Professor H.D. Hughes, Agronomy, and Murl MacDonald, Extension, led the membership and fundraising campaign in concert with the Alumni Achievement Fund (the precursor of the ISU Foundation). A total of $43,656 was raised and over 200 memberships sold.

Hughes was the right man for the job. He was well known across Iowa. His career as an agronomist at Iowa State had started in 1910 as head of the work in farm crops. He had been active on the extension gospel trains of the 1910s spreading the word across the state on alfalfa, oats, soybeans, and corn. He had been a leader in distribution and adoption of many new varieties of oats, corn, soybeans, wheat, and forages. Hughes also was an ardent teacher and active researcher for the college.

He was "a man of tireless energy and boundless enthusiasm, he taught his courses with obvious enjoyment. At every opportunity he was gone out into the state to conduct and supervise work," according to Collins. He was described by Muhm and Wadsley as a "beloved counselor and one of the university's great teachers." Hughes doubtlessly had a statewide network of former students to tap for the cause. He was 75 years old in 1957.

In 1956, R.K. Bliss, former director of Iowa Extension, on his weekly WOI radio talks (1932 to 1968) described the network of 16 outlying experimental farms across Iowa and the concept of a new "central experimental Agronomy Farm (that) will become the hub, with which the Outlying Experimental Farms will function." Bliss stated that a site for basic research was needed "in order that more of this basic, fundamental research work might be done, forward looking farmers from over the state, in a "grass roots" movement, had developed a plan and procedure to make possible for Iowa a more adequate Agronomy Research Farm; this farm to be located near the Iowa State College campus where the trained staff and the extensive laboratory and greenhouse facilities of the college can be used most effectively in conjunction with the field experiments." He explained how the basic research would underpin the applied work across Iowa at the outlying locations.

In 1957, Hughes was on WOI radio promoting the new Agronomy Farm concept. He explained the "total inadequacy of the presently available Iowa State College Agronomy Farm. There just isn't enough of it and the soil is too variable in type and relative production to be well suited for basic, critical research. When the present Agronomy Farm was established some 40 years ago, it was adequate to the needs then, but it is no more adequate now to the present-day Agronomy Research needs than the 1915 model cars would be suited to the highway travel of today."

"The New Agronomy Farm idea originated with members of the Iowa Crops Improvement Association, an organization of Iowa farmers that had its beginning as the Iowa Corn and Small Grain Association more than 50 years ago. Those who have been active in this organization through the years are particularly close to the work of the Agronomy Department and are very familiar with the research of past years, the results that have been obtained and the present-day needs. This Iowa farmer association is responsible for the Iowa Corn Yield Test, the Iowa Corn and Soybean Yield Contests, the procedures used in the increase and distribution of new crop varieties and of corn inbreds and hybrids, and for the "Certified Seed" program in Iowa."

In the fall of 1958, the Division of Agriculture (now the College of Agriculture and Life Sciences) at Iowa State College issued a 20-page booklet entitled "Agricultural Land and Buildings at Iowa State College" that clearly spelled out the need and plan for additional farm land, a new agronomy research site, a new agricultural engineering research site, and new livestock facilities on the vacated State Avenue lands. The piece was used with farmers, agribusinesses, and presumably legislators.

Iowa Crops and Soils Research Association. Out of the concern for a new Agronomy farm, a new organization called the Iowa Crops and Soils Research Association (ICSRA) was incorporated in 1955 as a non-profit corporation. The group was a statewide research farm association modeled somewhat after the local groups that supported the outlying experimental farms. Statewide membership, communication, and fund drives were organized. Almost every county had captains organized by their county agricultural

interests. The association founding fathers were the leaders of the Iowa seed and crop industry: Baker, Latham, Black, Sar, Strayer, Stine, Mathis, Ottilie, Eno, Falck, Hill, Newlin, and many others. They teamed with the ag college's leaders: Andre, Browning, Pierre, Bean, Hughes, MacDonald, Robinson, Bliss, and others to organize a statewide groundswell for a new Agronomy Research Farm. These were the days before the corn or soybean associations or check-offs. The stated goal of ICSRA was to raise awareness to acquire and construct a new ISU Agronomy Farm. By 1956, there were 227 members statewide, a board of 16 directors, and funds. Funding of $750,000 was sought from the Iowa Legislature spread over three fiscal years and included funds for new livestock facilities on the old State Avenue agronomy farm.

"The organization of the Iowa Crops and Soils Research Association was the outgrowth of this grassroots movement, with its one objective to serve as a vehicle through which funds might be made available toward the acquiring of a New Agronomy Research Farm at Ames," according to Professor Hughes.

Although falling short of their $125,000 fundraising goal, these efforts bore fruit in 1959 when the Iowa Legislature approved funding to purchase land and in 1961 to construct the original buildings at the AEA Farm. A 1965 report stated "the resources of this association, never exceeding $46,000, secured for Iowa agriculture facilities many times this amount and that this fund has now been committed to further growth in anticipation of future needs."

The ICSRA continued to be active and purchased other farms in the area as they came up for sale. In 1973, ICRSA acquired the nearby Burkey farm to be used for agronomic research and later sold it to the State of Iowa (1984). Over time, ICSRA owned the Bruner (1969), Sundberg (1986), and Kelley (1965) farms totaling about 430 acres plus some accumulated cash. In 1989, the Kelley farm was exchanged with ISU for the South Woodruff farm to facilitate the construction of the new Swine Nutrition Research Farm.

In the 1990s, the ICSRA membership had become inactive and was aging. Thus in 1996 the Iowa Crops and Soils Research Association dissolved and their assets were merged into the Committee for Agricultural Development (CAD). CAD, an affiliate of the ag college, had incorporated in 1943 to increase and market seed developed by ISU. Over time, CAD had become a landowner in Story and Boone counties to assist the college. CAD became owner of the ICSRA farms and assumed the role of land purchaser to accommodate expansion. CAD and ICSRA acquired the Sorenson farm in 1995. Later, CAD acquired the Marsden farm (1999) and the Bass farm (2009), which were both contiguous to the original tract.

The farmland. In 1960, the current AEA Farm was purchased in three tracts. The E. A. Kramme farm of 238.5 acres was purchased for $131,180; the Quentin Olsen farm of 160 acres was purchased for $92,400; and the George Leonard farm of 27.8 acres was purchased for $11,692. The farms were contiguous and created a 426.3 acre block in sections 8 and 9 Colfax Township Boone County about six miles west of campus. The farm was assigned to the agronomy research (~320 acres) and agricultural engineering research (east 72 acres).

In 2014, the land base of the AEA farm complex consists of 1,159.9 acres. This acreage is the original tract (less the Highway 30 right-of-way for 411.3 acres) plus Bass (64.3 acres), Burkey (153.0 acres), Marsden (155.5 acres), Boyd (74.1 acres), and nearby Bruner (156.0 acres) and Sorenson (145.7

acres) farms. All the farms are managed as one seamless unit regardless of ownership and are not subdivided except by county roads.

The original site was an excellent selection and is now a hub of research activity on bustling 4-lane U.S. Highway 30 not far from the Farm Progress Show site. The land complex is a testament to the foresight and leadership of multiple individuals and organizations over many years. The framework for land acquisition these leaders put in place and fostered has proven efficient and self-supporting.

The facilities and improvements. The farm headquarters building site was selected on a slight rise east of the county gravel road (U Avenue) and south of the Kramme farmstead. It allowed ample room for expansion and excellent drainage. The original buildings were designed by Norval Curry, a private ag engineer from Ames. His drawings are dated March 1962. The buildings were erected and occupied for the 1963 season. The original four buildings consisted of the large headquarters building (~22,700 sq ft), which included offices, conference room, shop, workrooms, restrooms and labs, a dryer/cooler building (9,720 sq ft), a threshing building (5,400 sq ft), and a machinery storage building (~4,000 sq ft) for a total of 41,830 sq ft. Over the years, many more buildings (14 more buildings), primarily machinery storage buildings, were built. A modern ranch-style home and garage were added. Most of the old farm buildings were removed. Today there are a total of 17 buildings at the headquarters site (one of the new structures is an addition to the headquarters shop) with more than 130,000 sq ft under roof plus the residence and one small original barn. There are also two buildings on the nearby Bruner Farm (~8,670 sq ft), two buildings on the adjacent Boyd farm for extension programming (totaling 7,680 sq ft), and the BioCentury Research Farm (described elsewhere). Also, the LEBRC (Livestock Environment Building Research Center) facility (4,000 sq ft) was built in 1998 on the east end of the main farm for use by the ag engineers involved in livestock housing and manure research. The sum of the structures easily exceeds 200,000 sq ft under roof.

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AEA Timeline

1915	South State Avenue agronomy farm opened.
1934	Ag engineering land acquired on South State Ave.
1949	Floyd Andre named dean of the ISU College of Agriculture.
1950	ICIA formed by merging two existing organizations.
1951	College staff consider need for new agronomy farm.
1952	New agronomy building opened on campus.
1955	ICSRA incorporated.
1956-58	ICSRA fund and membership drives conducted.
1959	First Legislative appropriation made.
1960	Original farms acquired.
1961	Second Legislative appropriation made.
1961	Soil survey of new farm conducted.
1962	Some plot work started on new farm.
1963	Buildings completed on new farm.
1961-64	Tile system installed on new farm.
1964	New farm fully operational. New staff in place.
1964	Nicholson becomes agronomy farm superintendent.
1964	Langenbacher becomes ag engineering manager.
1965	Field day open house held.
1968	Langenbacher dies. Fish becomes ag engineering manager.
1968	Visitors to farm total nearly 2,000 in one year.
1969	Bruner Farm acquired by ICSRA.
1972	U.S. Highway 30 paved as a four-lane past the farm.
1972	Corn inbred B73 released.
1973	Burkey Farm acquired by ICRSA.
1975	Rhizotron constructed at Bruner Farm.
1976	Boyd Farm acquired by CAD.
1977	Oat variety Multiline E77 released with rust resistance.
1982	Soybean variety Vinton 81 released. It became the standard of the tofu industry.
1983	Spoke injector developed for fertilizer application in reduced tillage fields.
1984	Burkey Farm transferred to ISU ownership.
1985	Bahrenfus becomes agronomy farm superintendent. Nicholson retires.
1985	Starrett transfers to agronomy manager.
1986	Water quality research starts on sloping land on west edge of farm.
1986	Automated weather station installed and is part of statewide network.
1988	VanDePol becomes ag engineering manager. Fish retires.
1988	Extension starts field training sessions that become FEEL.
1989	USDA National Soil Tilth Laboratory opens in Ames.
1992	FEEL builds educational building on Boyd farm.
1994	Starrett becomes manager of mobile plot crew aka the Road Crew.
1995	Sorenson Farm acquired by CAD.
1990s	Major field days held at the farm.
1996	ICSRA dissolved and assets transferred to CAD.

1998 LEBRC built at farm.
1999 Marsden/Paulsen farm acquired by CAD.
2002 Fiscus becomes agronomy farm manager. Bahrenfus retires.
2003 AEA Farm transferred from departmental to college management.
2003 Fiscus and VanDePol become co-managers of the AEA Farm complex.
2006 Major expansion to shop completed.
2007 Plant pathology building completed.
2008 Farm Progress Show moves to new permanent biennial site near research farm.
2008 Bass Farm acquired.
2009 Biomass sorghum breeding research started.
2009 BCRF dedicated.
2010 Abandoned railroad trestle removed and waterway shaped.
2010 Starrett retires. Berns assumes management of plots away from AEA complex.
2012 Successful Farming magazine uses farm for a story on unmanned aircraft.
2013 Visitors to farm total 3,730 in one year (includes FEEL and BCRF).
2013 Farm serves 72 projects and 58 principal investigators.
2013 Farm annual budget is approximately one million dollars.
2014 50th anniversary of AEA Research Farm celebrated.

Abbreviation key:
AEA Agricultural Engineering/Agronomy
BCRF BioCentury Research Farm
CAD Committee for Agricultural Development
FEEL Field Extension Education Laboratory
ICIA Iowa Crop Improvement Association
ICSRA Iowa Crops and Soils Research Association
LEBRC Livestock Environment Buildings Research Center