INTRODUCTION

The Northwest Ordinance, passed by Congress in 1787, committed the United States to higher education; however, it was not until the middle of the nineteenth century before people in Illinois demonstrated support for that commitment. Certainly, the idea of applying higher education and engineering principles to some agricultural production problems occurred very early, but before 1850 most pioneers were too busy wrestling a livelihood from the soil to worry about higher education.

By 1850 the situation was changing, however. Restless New Englanders were moving westward along the lakes and through the "firelands" of Ohio—the Western Reserve—in search of land suited for cultivation. The spring freshets of the Ohio River carried houseboats to southern Illinois, and Virginians and Carolinians filtered through the Cumberland Mountains to find new homes. The Illinois territory offered a home on the prairie with no forest to conquer. Yet the interior flat land presented challenges to the settlers. For example, crops could not be produced on much of the land without breaking the sod and providing better drainage.

Each family or settlement had to be self-sustaining because trails were impassable much of the year. Then the steamboat came into use providing a means of marketing surplus grain. This provided an incentive to produce more which in turn called for more land and im-
proved methods of production. The Louisiana Territory was opened for settlement and the Midwest, with its untapped resources of climate, fertility, rainfall, and river transportation, soon was destined to become the grain belt of America. The invention of the McCormick binder and the use of the steel plow stimulated agriculture. More land was broken, more crops were seeded, and harvest drudgery was reduced.

The farm press came into existence. Articles in the eastern agricultural magazines and papers, by authors such as Solon Robinson, brought new people from all parts of the East to Illinois and other parts of the Northwest Territory. Robinson traveled extensively through the Midwest and his accounts were widely read. His progressive spirit and vision were evident in his strong advocacy of scientific practices that were considered daring and novel to the majority of farmers of his time. For example, he discussed and recommended using fertilizers such as lime, guano, marl, swamp muck, and animal manure; deep plowing; farm accounting; improving breeds of livestock; developing superior varieties of seed through plant selection; adopting new agricultural implements and machines; cultivating trees, shrubs, and flowers; improving diets for human health; ventilating farm buildings; and bettering rural housing. Robinson also promoted feeding animals properly and protecting them from weather, diversifying crops, improving weather record keeping, and using railroads to aid agriculture.

Other agricultural leaders who were born and educated in the East came to Illinois during this time. One was Jonathan Baldwin Turner, a teacher at Illinois College in Jacksonville with a degree in the classics. In spite of his classical background, he was not an “ivory tower” professor. He was a proponent of applying science to agriculture. His philosophy probably developed from being brought up on a poor Massachusetts farm.

Turner was a gifted orator. On November 18, 1851, he addressed a farmers’ convention at Granville, Illinois, and criticized universities for satisfying only the needs of a “professional class” who, as he put it, had already created “a volume of literature that would well-nigh sink a whole navy of ships.” He called for “new universities that would teach every science and art known to humanity and elevate the farmer and mechanic to that exalted position in human society that God meant
for them to occupy." It was at the Granville convention that the following resolutions were passed:

Resolved, That we greatly rejoice in the degree of perfection to which our various institutions, for the education of our brethren engaged in professional, scientific, and literary pursuits have already attained, and in the mental and moral elevation which these institutions have given them, and their consequent preparation and capacity for the great duties in the spheres of life in which they are engaged; and that we will aid in all ways consistent, for the still greater perfection of such institutions.

Resolved, That as the representatives of the industrial classes, including all cultivators of the soil, artisans, mechanics and merchants, we desire the same privileges and advantages for ourselves, our fellows and our posterity, in each of our several pursuits and callings, as our professional brethren enjoy in theirs; and we admit that it is our own fault that we do not also enjoy them.

Resolved, That, in our opinion, the institutions originally and primarily designed to meet the wants of the professional classes as such, cannot, in the nature of things, meet ours, no more than the institutions we desire to establish for ourselves could meet theirs. Therefore,

Resolved, That we take immediate measures for the establishment of a University, in the State of Illinois, expressly to meet those felt wants of each and all the industrial classes of our State; that we recommend the foundation of high schools, lyceums, institutes, etc., in each of our counties, on similar principles, so soon as they may find it practicable so to do.

Resolved, That in our opinion such institutions can never impede, but must greatly promote, the best interests of all those existing institutions.

Turner's resolutions and an accompanying plan for a proposed college attracted attention throughout the state, the Midwest, and in all sections of the country where agriculture was common.

*Early Engineering*

Before the University of Illinois opened in March 1868, engineering problems for agricultural production were solved by the efforts of indi-
viduals or small groups who had the inventive genius to design and build new machines or structures. The formation of the university, however, provided teaching programs that would educate students to solve agricultural engineering problems in a more systematic manner.

A professor of agricultural engineering, S. W. Shattuck, was appointed in 1870 to teach courses in agricultural and civil engineering. The title of his course is not known but it likely was similar to “Agricultural Engineering and Architecture” that was listed for the first time in the 1876–77 catalog of courses. Later the appointment of F. R. Crane in 1899 gave new emphasis to agricultural engineering courses since he taught several courses while a member of the Department of Agronomy. Then in 1906 improved teaching facilities were made available with the completion of a building specifically designed for teaching agricultural engineering courses.

After World War I, students requested more agricultural engineering courses. The first step toward addressing this need was taken with the approval of a Department of Farm Mechanics in 1921 and the appointment of E. W. Lehmann as its head. This action set in motion the fulfillment of part of Turner’s dream of providing practical education in agriculture and the mechanical arts for the betterment of agriculture. What better way to achieve his dream than through a hybrid program embodying agriculture and engineering. This hybrid program was first called agricultural mechanization and later agricultural engineering. It provided service to the people of Illinois and the nation through teaching, research, and public service. The evolution of this program is discussed in the chapters that follow.

A chronology is presented here to help put the university and department history in perspective.

1867 Illinois Industrial University Founded
1868 Instruction Began
1870 College of Agriculture Established
1870 Shattuck Appointed Professor of Agricultural Engineering
1876 Morrow Plots Established
1880 College of Engineering Established
1885 Name Changed to University of Illinois
1888 Agricultural Experiment Station Established
1895  Davenport Named Dean of College of Agriculture
1900  Division of Farm Mechanics Formed in Department of Agronomy
1901  First Agriculture Building (Davenport Hall) Built
1903  Engineering Experiment Station Established
1904  First Agricultural Mechanization Graduate
1906  Farm Mechanics Building Completed
1907  ASAE Founded
1916  R. I. Shawl Joins Faculty
1921  Department of Farm Mechanics Formed, Emil W. Lehmann Named Head
1922  Agricultural Mechanics Extension Program Developed
1923  Farm Building Plan Service Established
1924  Tractor Laboratory Added to Building
1932  Department Name Changed to Agricultural Engineering
1932  Agricultural Engineering Curriculum Approved
1934  First B.S. Agricultural Engineering Degrees Awarded
1948  M.S. Degree Approved
1949  First M.S. Degrees Awarded
1950  Agricultural Engineering Curriculum Approved by ECPD
1952  Agricultural Engineering Research Laboratory Completed
1955  Frank B. Lanham Named Second Department Head
1956  First B.S. Degrees Awarded in Agricultural Mechanization Option
1957  Agricultural Engineering Curriculum with Four Options Approved
1964  Ph.D. Degree Approved
1966  First Ph.D. Awarded
1978  Roger R. Yoenger Named Third Department Head
1983  Agricultural Engineering Sciences Building Completed
1985  Roscoe L. Pershing Named Fourth Department Head
1986  Fifth Option for Agricultural Engineering Curriculum Approved
1994  Loren E. Bode Named Fifth Department Head
1996  Agricultural Mechanization Name Changed to Technical Systems Management