

Celebrating the First 100 Years



Introduction

The founding faculty, regents, and students of the College of Agriculture and Mechanic Arts could not have imagined the institution that is now located at the mouth of Mānoa Valley. It is no longer covered with weeds, cactuses, and rocks but with a multitude of research facilities and classrooms. The small vegetable farms separated by rock walls and the fields planted and tended by the college's faculty and students are gone—the last vegetable plot disappeared in 1968, giving way to St. John Plant Science Laboratory and Pope Laboratory. “Temporary” buildings that lined Maile Way for nearly 30 years were replaced by the Agricultural Engineering Institute and the current Gilmore Hall. The original Gilmore, torn down in 1973, was replaced by the Art Building. Henke Hall was a college facility until its occupants moved to new quarters in Agricultural Sciences III. New college facilities, including the G. Donald Sherman Laboratory, moved mauka, away from the center of the campus, leaving only Miller Hall near Varney Circle.

Our college was built by dedicated visionaries, and it is only fitting that they had buildings named for them. Willis Pope, the acting dean and a prominent horticulturist, established the academic foundations of the new college as it awaited the arrival of its first president, John Gilmore, in 1908. Louis Henke,

a pioneer in tropical agriculture, helped the college achieve its tripartite goals of research, teaching, and extension. Carey Miller is remembered for work on the composition and nutritive value of foods grown here. G. Donald Sherman contributed to our understanding of volcanic soils, promoted creation of the Food Science and Technology Laboratory, and built experiment stations on the islands of Hawai'i and Maui. Crawford Hall was named after the UH president who oversaw the merger of the federal Experiment Station and Extension Service with the university. Krauss Hall was dedicated to Frederick Krauss, a strong and effective proponent of diversified agriculture, youth development, and extension. Off-campus facilities named for faculty are Bice Hall at Waialeale Experiment Station, named for Charles Bice, a poultry researcher; Beaumont Agricultural Research Center in Hilo, named for John Beaumont, a horticulturist; and the Tadashi Higaki wing at the Komohana Research and Extension Center in Hilo, named in honor of his contributions to extension.

Over the past 100 years the college has contributed to the growth of diversified agriculture, protection of our natural resources, and the strengthening of our families and communities. The college's 'ohana, past and present, can look with pride on its accomplishments and contributions to Hawai'i and the world.

Beginnings

Barry M. Brennan and James R. Hollyer

The president, faculty, and staff of the College of Agriculture and Mechanic Arts did not have it easy. In 1907, there was no strong groundswell of support for a college, even though the need for one in the Hawaiian Islands had been discussed for over 50 years. As early as July 7, 1877, an editorial in the *Pacific Commercial Advertiser* stated that a kingdom without a university was an anomaly. Fifteen years later, Representative Luther Kanealii's bill to establish a college in the Hawaiian Kingdom was tabled on the grounds that the time was not yet ripe for establishing such an institution. It would take 15 more years before social, political, and economic conditions aligned to make that vision a reality.

A major financial incentive came when Hawai'i became a territory of the United States in 1900. It now was eligible to apply for federal funds to establish a land grant college. The Morrill Acts of 1862 and 1890 typically provided for both land (for the college or to be sold to support a college) and up to \$25,000 annually to support a land grant college in every U.S. state and territory "to teach such branches of learning as are related to agriculture and the mechanic arts...." Awareness of that provision prompted the introduc-

tion of proposals to establish a college in the 1901, 1903, 1905, and 1907 Territorial Legislatures.

Wallace Farrington, editor of the *Evening Bulletin* and future territorial governor, was the champion of efforts to create a college. After considerable maneuvering by Farrington, a bill was introduced by Maui Representative William Coelho on March 1, 1907 to "Establish the College of Agriculture and Mechanic Arts of the Territory of Hawaii and to Provide for the Government and Support Thereof." On March 23, 1907, Governor George Carter signed Act 24 of the Territorial Legislature establishing the College of Agriculture and Mechanic Arts of the Territory of Hawaii.

Finding a president with experience in tropical agriculture to head the new institution was no easy task. The Board of Regents' first choice, J. E. Roadhouse, dean of the Technical Institute of San Luis Obispo, California, died just two months before he was to assume the college presidency. Securing the federal land grant funds, but not any federal land, required the regents to move quickly to demonstrate that they actually had a college eligible for Morrill Act funds. They hired Willis Pope, vice-principal



Wallace R. Farrington, vigorous proponent for establishing a college in Hawaii and Territorial Governor of Hawai'i from 1921 to 1929.




of the Territorial Normal School, to serve as acting dean and to purchase furniture and scientific equipment, write a prospectus, and recruit a student body. Pope had worked at the Territorial Normal School since 1902.

In the meantime, the regents turned to Jacob Schurman, president of Cornell University, the nation's leading agricultural institution, for assistance in finding a new president. Schurman recommended Cornell graduate John Gilmore, who had agriculture school experience in the Philippines and China and had spent 1900–01 at the Territorial Normal School prior to taking a position at Pennsylvania State University. Upon his acceptance, Gilmore was allowed to recruit faculty members, several of whom were Cornell graduates, thus establishing a “Cornell connection” that still exists today in the college.

Gilmore might not have been so enthusiastic about accepting the presidency had he known how unsettled the new College of Agriculture and Mechanic Arts really was. He had no campus, no faculty, no student body, and very meager funds. The federal government did not endow Hawai'i's college with land as it had done elsewhere. (It was not until 1960, 53 years later, that the university finally received \$6 million in lieu of a “land” grant.)

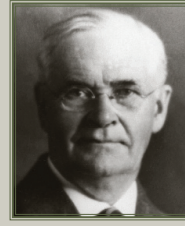
Even after Gilmore's arrival in 1908, it was doubtful that the college would qualify for \$30,000 in federal funding under the Morrill-Nelson Acts, because of the uncertainty about the interpretation of congressional intent regarding support for land grants in the territories. Federal funding for the college was critical, as the Territorial Legislature appropriated only \$25,000 for the biennium (\$10,000 for college buildings and \$15,000 for salaries) to hire a president and faculty, build a temporary home, and purchase furniture, books, and other necessities. In the second year of the biennium, \$5,000 was taken back by Governor Walter Frear to cover shortages in other government departments. It looked as if Gilmore had traveled over 5,000 miles only to see the college fail before it held its first class.

Willis Thomas Pope
February 17, 1873 – September 17, 1961

First (Acting) Dean Horticulturist
December 6, 1907–1937
(non-continuous service)

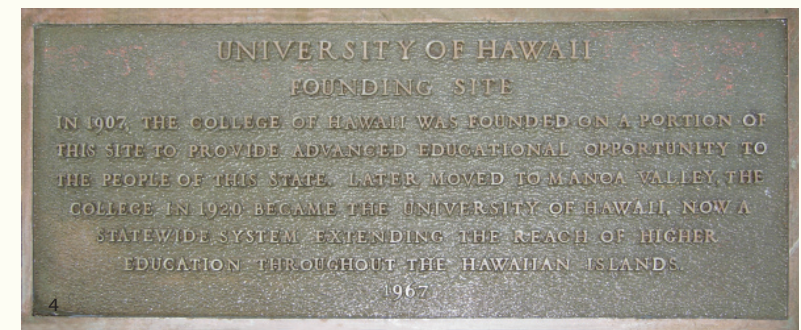
The “dean without a school,” and first administrator, Willis Pope, vice-principal of the Territorial Normal School, crafted the educational prospectus that would be the academic foundation of the College of Agriculture and Mechanic Arts of the Territory of Hawaii. A pioneer in the horticulture of papaya, macadamia, and mango, the ‘Pope’ mango is named in his honor.



John Washington Gilmore
May 9, 1872 – June 25, 1942

University President
March 22, 1905 – August 31, 1913

One of many Cornell University graduates to come to Hawai'i, Gilmore was the first president of the College of Hawaii. His vision for the college set a course for agricultural education and the college's contribution to agriculture for years to come. He was a popular speaker before audiences of farmers as well as students, and he was known for traveling to the neighbor islands to visit with farmers.



2. This wooden framed home, called the Maerten's house, is where the first classes for the university were held in 1908.
3. The 1909–10 college faculty:
Front row (L-R): Vaughan MacCaughey (Professor of Botany and Horticulture [and would lead campus Extension work in 1914]), Arthur R. Keller (Professor of Civil Engineering [and first Dean of the College of Applied Sciences in 1920]), Agnes Hunt (Instructor in Domestic Science), John S. Donaghho (Professor of Mathematics and Astronomy), Carrie P. Green (Librarian), Briggs E. Porter (Professor of Animal Husbandry); second row: William A. Bryan (Professor of Zoology), Raymond C. Severance (Instructor in Physics and Chemistry), John M. Young (Professor of Engineering).
Third row: Mildred M. Yoder (Instructor in English, History and Economics), Frank T. Dillingham (Professor of Chemistry and Sugar Technology), Minnie E. Chipman (Instructor in Ceramics), John W. Gilmore, (President and Professor of Rural Economy and Agronomy).
Not pictured: Valentin Buehner (Assistant Professor of German and French).
4. A plaque, dedicated January 9, 1968, located on the corner of Beretania and Victoria streets (Academy Art Center at Linekona, Honolulu Academy of Arts), marks the location of the first building of the College of Agriculture and Mechanic Arts.



5. The corner of Victoria and Young streets, the location of the College of Agriculture and Mechanic Arts of the Territory of Hawaii.

6. From this 1912 map, one can see that the college's farm had taken root.



The college's first home was an old frame house on the makai corner of Young and Victoria streets, across from Thomas Square, which once housed the Chinese Consulate. It was remodeled in 1907–08 to include an office, a lecture room, two laboratories, and a library. The following year, a new building, with 15 classrooms, offices, laboratories, and storerooms, was erected next to the Maerten's House for \$4,320.

The first students, five boys from Pope's agricultural class at the Territorial Normal School (located on the block bordered by Hackfeld, Quarry, Green, and Alapai streets, just two blocks north of the new college), were recruited in order to meet the federal requirement that the college have a student body. Without a student body, the \$30,000 Morrill-Nelson Acts appropriation would stay in Washington, D.C. It has been said that each student enrolled "endowed" the college with \$6,000. In February, the five students were enrolled in a preparatory course, and in September 1908, they joined five regular students as the college's first class.

Even before passage of legislation approving the creation of the college, the site for the permanent campus had been the subject of years of debate in the Legislature. In 1901, Representative J.W. Kaliikoa of Keauhou presented a petition from North Kona residents asking for a "territorial university" in their district. Senator Daniel Kanuha's bill to establish an "Agricultural College and Model Farm" on O'ahu was amended to locate the college in Hawai'i island's Mountain View, home district of the senate president. By 1903, its proposed location changed to Lahainaluna Seminary of Maui, district of the speaker of the house.

Farrington, the college's champion, favored a 200-acre site in Wai'anae. The Legislature, however, wanted a college closer to the "center of wealth or culture." After visiting two sites in Honolulu, the regents selected the newly developed, privately owned Highland Park tract and the Crown Lands of Puahia in Mānoa Valley.

By January 1911, 90 acres in the area had been cobbled together from leased and private lands. Much of the land was occupied by vegetable growers whose farms were delineated by stone walls. At the time, President Gilmore considered the greatest need of the college to be clearing the campus of "weeds, cactus, bushes and rocks" and asked the Legislature for funds to do so. The campus definitely did not look like an institution of higher learning, with stately brick buildings, paved streets, and neat walking paths.

The first "building" on the new campus—a shed to house mules, feed, and implements—was constructed with "whatever materials were found on the grounds." In 1910, the Legislature provided \$4,000 for a poultry shed and dairy barn. The entire college moved to the Mānoa campus in 1912, when Hawaii Hall, the college's first permanent building on its new campus, was constructed. This 35,550 square foot structure was built for \$75,000.

Classes in Hawaii Hall began in the fall of 1912, despite the fact that it lacked some doors and a few plumbing and electrical connections. Future roads were marked only by



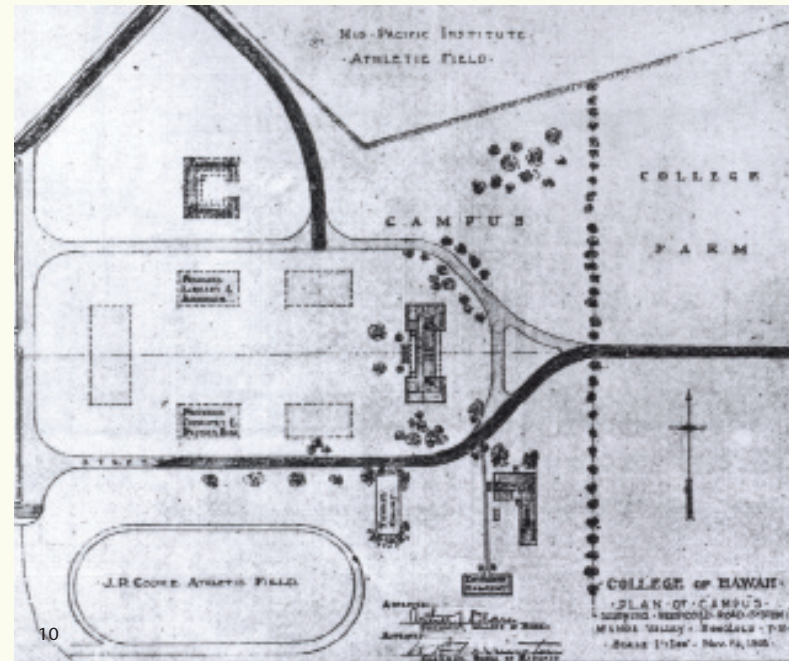
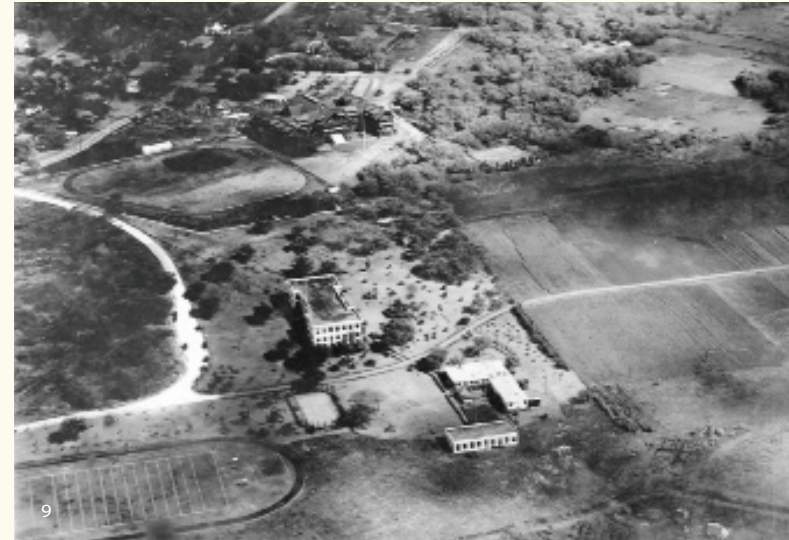
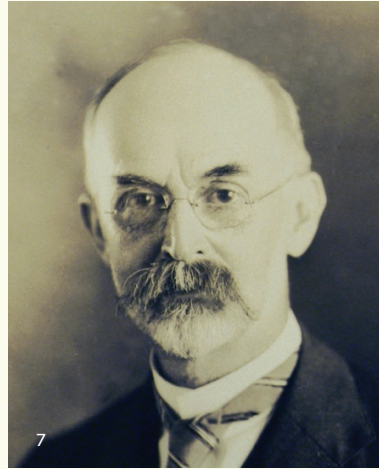
rough paths, some of which were so muddy during the rainy season that Gilmore used his horse and buggy to pick up the faculty. Mud scrapers were available at the doors to clean shoes and boots before entering.

Dealing with mud was only one of many problems faced by Gilmore. Squatters had to be removed from the campus grounds. Cows from neighboring dairies wandered through the campus. Students often were ill-prepared for college-level courses. Gilmore resented having to submit formal requisitions to purchase small items from local fish markets and fruit stands for horticulture, zoology, and domestic science courses.

Gilmore had to contend with faculty who had their own special interests. One faculty member, John Young, president of a local engineering company, bid on campus construction work, creating a situation that Gilmore alleged interfered with Young's obligation to provide "continuous and undivided services" to the college. Gilmore also had his disagreements with the Board of Regents, who refused to back his attempt to fire Young. But the regents weren't above interfering with faculty employment. They demanded that Henry Severin, an entomologist preoccupied with control of the Mediterranean fruit fly, be fired for not teaching enough. Severin was fired in 1912. The following year, having had enough challenges from faculty, regents, and staff, Gilmore submitted his letter of resignation and left for the University of California.

Arthur Dean, Gilmore's replacement, was a chemist with a doctorate from Harvard; he was full of youthful energy and brought with him "high grade business common sense." Dean would need that youthful energy, as his budget was so severely limited that he was required to teach several courses to cover his own salary. Fortunately, John Donaghho, who served as interim president after Gilmore left, had the foresight to hire a clerk-bookkeeper to handle much of the college's routine administrative work.

The cadre of regents whose focus was on educational goals in establishing the college was replaced by businessmen



7. John S. Donaghho, acting president from 1913 to 1914.
8. Arthur L. Dean, president from 1914 to 1927.
9. This 1912 photo illustrates how large the college farm in Manoa once was, extending from near Hawaii Hall to Manoa Stream.
10. This 1918 plan by faculty member John Young shows the growing campus and its farm.



Hawai'i's Agricultural Roots Run Deep in Research

James R. Hollyer and Robert E. Paull

Land grant colleges established for the purposes of classroom education, agricultural Experiment Stations providing research data and breakthroughs for farmers and ranchers, and the Extension Service taking research results to clients, these components of our college began separately and, over time, were intertwined.

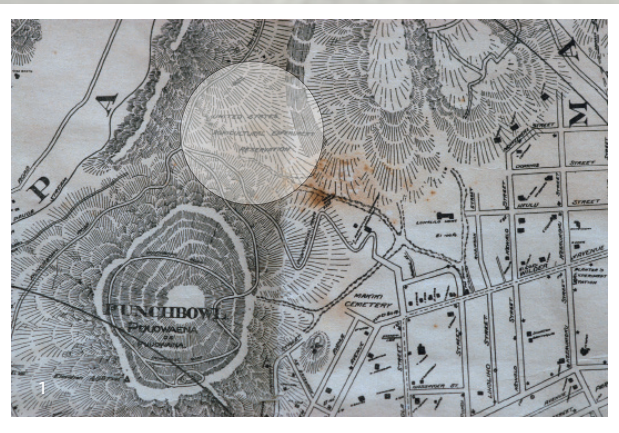
“Land grants,” as the educational institutions are often called, were initiated by President Abraham Lincoln’s signing of the first Morrill Act on July 2, 1862. The Extension Service was fully born with the Smith-Lever Act of 1914. The first state-supported agricultural station was established in Connecticut in 1875 under the direction of Samuel W. Johnson of Yale University. Fourteen other states quickly followed with their own stations, and they inspired Congress to pass the Hatch Act of 1887 to provide funds for a station in each state.

Around 1885, when Hawai'i was still a kingdom, King David Kalakaua sent samples of sugarcane borer to the U.S. Department of Agriculture’s Division of Entomology for identification. On January 4, 1893, Queen Lili'uokalani signed into law legislation establishing the Hawai'i Bureau of Agriculture and Forestry (later the Hawai'i Department of Agriculture). From the remnants of the Royal Hawaiian Agricultural Society (1850–1869), the Hawaiian Sugar Planters’ Association was established in 1895, and during this period, the seeds of the U.S. Agricultural Experiment Station were planted when, while initiating the Bureau of Agriculture and Forestry, the government set aside a 222-acre parcel for research to provide new information on agriculture and enhance and diversify the economy. “The land selected is that portion of Kewalo [Makiki], embracing one-half of Punchbowl and all the rich slope towards Lunalilo home and running mauka to an elevation of 1000 feet.” A substation was created at 1000 feet and used until about 1936 to grow species that required cooler temperatures. The substation was located on what is now the Tantalus Arboretum Trail, and some of the earliest macadamia trees planted in Hawai'i are still growing there.

On May 25, 1900, Congress allocated the sum of \$10,000 to the secretary of agriculture to perform a reconnaissance and eventually to establish an agricultural experiment station in Hawai'i. That study was done in July–August 1900 by Dr. William Stubbs, director of the Louisiana Agricultural Experiment Station. It confirmed that establishing a federal research station in the Territory of Hawaii was appropriate, and on April 5, 1901, Jared Smith stepped off a ship in Honolulu to become its special agent in charge. Although columnists here doubted that the malihini could teach local growers much, Smith’s efforts eventually changed agriculture in Hawai'i dramatically.

The formal transfer of the 222-acre station site from the territory to the federal government was done in June, 1901. Within months, Smith and a hired crew cleared land, built the director’s house and the station stable, and planted experimental plots. Employees hired by Smith in the first few years included Thomas Sedgwick (agriculturist), Q.Q. Bradford (farm foreman), Delos Van Dine (entomologist), J. Edgar Higgins (horticulturist), Edmund Shorey (chemist), F.E. Conter and C.R. Blacow (tobacco agriculturists), Frederick Krauss (rice “expert,” who was working for Kamehameha Schools’ agricultural program), and one of the first female agricultural scientists in Hawai'i, Alice Thompson (assistant chemist). Over the years, many crops were grown at the Pensacola Street station. Pasture grass improvement was a major focus of agronomic research due to the need to reduce animal feed imports and to increase the nutritional value of the available forage species. Despite limited budgets, small research facilities, and relatively crude research tools and techniques, these researchers performed work that is still quoted today. Jared Smith left the station in June 1908, after giving Honolulu a memento of his presence: the large, world-famous Indian banyan tree, planted in 1904 in the courtyard of the Sheraton Moana Hotel in Waikiki.

Besides the Punchbowl research site, the station also established temporary and permanent research stations and cooperative plots throughout Hawaii, including Hilo school (Hawai'i), Glenwood/'Ōla'a



The U.S. Agricultural Experiment Station is shown on 1912 map of Honolulu.

(Hawai'i), Waipi'o (O'ahu), Nahiku/Hana (Maui), a homestead on Kaua'i, Kula (Maui), Nu'uuanu valley (O'ahu), Schofield Barracks/Castner (O'ahu), Kaho'olawe, Haleakala (Maui), and Parker Ranch (Kamuela, Hawai'i). Stations that we still operate include Poamoho (1936), Kona Branch Station (1937), and Waimanalo (1950). Many of our newer stations began in the late 1950s to the 70s. Besides the Manoa campus, today we have 16 research facilities statewide.

The new College of Hawaii campus was also a working farm from the first day. A majority of the property, once cleared of rocks and brush, went to the college's teaching farm. Frederick Krauss, working for the college since 1909, led the way in preparing the campus farm. While not getting any federal dollars for research (a sore point with administration and faculty for years), faculty and students nevertheless did "class research" that benefited Hawai'i. At one time or another on the Manoa campus, the college had large agricultural test plots, sheds for poultry, swine, and cattle, a milking shed, an insectary, an orchid house and other greenhouses, the Agricultural Engineering Institute, and other facilities related to agriculture. A major push to move research off the Manoa campus begun in the late 1950s, because of the growing university's demand for more buildings, accelerated a deliberate expansion of research across the state. Most of the land that was once the college farm is now covered by the East-West Center, Manoa campus buildings, and the campus mall.

On July 1, 1929, the U.S. Agricultural Experiment Station came under joint management of USDA and the university, and all the federal employees who had been operating as federal extensions agents were transferred to the university. David Crawford, the university president, was also the first permanent director of extension under the newly formed relationship. The Experiment Station, however, was still quite separate in many ways from the College of Applied Science. The full integration of the research station with the university did not take place until 1938.

It was not until 1929 that UH's Experiment Station was able to obtain funds under the Hatch Act. The lengthy delay was caused by questions of whether a territory should have the same rights as a state. Crawford outlined reasoning that Hawai'i should be treated as an

equal in his 1927 publication, *Hawaii's Position in Experiment Station Appropriations*. With the help of Senator Hiram Bingham of Connecticut, who sponsored the Hawaii Act of 1928, Governor Wallace Farrington, and Hawai'i's House Delegate Victor Houston, Congress was persuaded to pass the act, and President Calvin Coolidge signed it. By 1938, the Experiment Station's funding level was up to par with its mainland contemporaries. At the end of 1938, the U.S. Agricultural Experiment Station, which had begun in June 1901, was no more, and the Hawaii Agricultural Experiment Station was managed by the university.

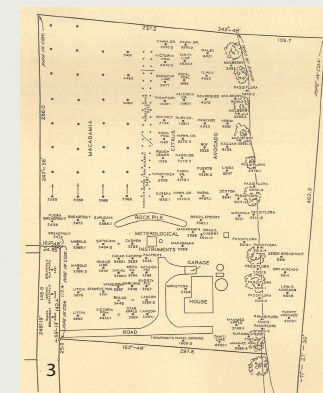
Also in 1938, the Punchbowl station property was transferred to the federal government, and equipment and projects from the station began to be moved to Manoa campus. Use of the old Punchbowl site dwindled with the coming of World War II. In 1945, the station property on Punchbowl was transferred once again back to the territory, and by 1948 the territory commenced planning the Louis Stevenson intermediate and Abraham Lincoln elementary schools on the site. On Papakolea Ridge, houses began to take over the upper side of the former station site.

Another significant structural change impacting Extension Service and Experiment Station activities was HITAHR, the Hawaii Institute of Tropical Agriculture and Human Resources. This reorganization was intended to harmonize work between the agriculture and Human Resources efforts of the college. HITAHR existed from 1978 to 1999, when it was dissolved by a new college strategic plan.

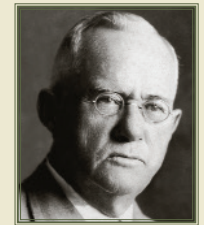
The three fundamental missions that began under separate aegis in Hawai'i gradually were merged in the college, and today many faculty have appointments split among research, extension, and instruction.

"...Although accurate figures are not available, it has been estimated that each year 40 million dollars of Hawaii's agricultural income is due either entirely or in some measure to research conducted by the Experiment Station. Phrased another way, the findings of the Station result in an annual income to the Territory more than equal to the total amount of money that has been spent since the Experiment Station was established 52 years ago."

President's Report, The University of Hawaii, 1951-52.



2. Glenwood Research Station on Hawai'i helped nurture many animal operations, especially dairy (ca. 1915).
3. Plan of horticultural plantings on the Kona substation (1931).

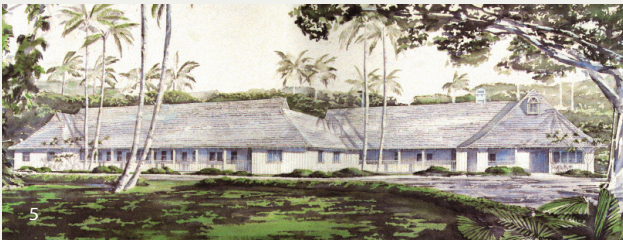


Jared Gage Smith
September 13, 1866 – November 19, 1957

Special Agent
April 5, 1901 – 1916
(non-continuous service)

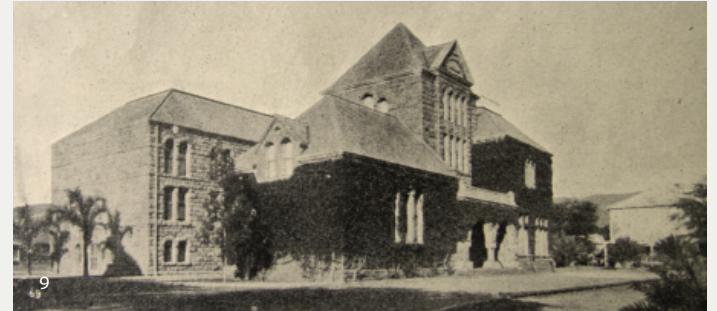
The "father of the agriculture experiment system" in Hawai'i, Smith began creating a viable research center on nearly barren ground on the east side of Punchbowl Crater in 1901. He was a strong and vocal proponent of diversified agriculture. In 1904, he planted the famous banyan tree on the makai side of the Moana Hotel, which is now listed as the Millennium Landmark Tree.





Honolulu's Cooperating Agricultural Institutions

One of the most unique aspects of agricultural research and education in Hawai'i, since the early 1900s, has been the cooperative relationship that prevailed among various entities concerned with creating successful agriculture in the Islands, including the U.S. Agricultural Experiment Station, the Hawaiian Sugar Planters' Association (now the Hawaii Agriculture Research Center), the Pineapple Research Institute, the Bureau of Agriculture and Forestry (now the Hawai'i Department of Agriculture), and the college and university. All of these organizations were situated within a few miles of each other in Honolulu. There is abundant evidence that personnel were shared or subcontracted among them, and some scientists moved from one to another, and back, over their careers. The founding of the Graduate School of Tropical Agriculture at UH in 1931 brought together educators from these organizations, as well as the Bishop Museum, to teach aspiring graduate students. The Agricultural Engineering Institute was a direct result of a successful collaboration among three research institutions in 1947. Today, scores of employees of these or their successor agencies, including the USDA Pacific Basin Agricultural Research Center in Hilo, as well as many of Hawai'i's current agricultural business enterprises, are former undergraduates or advanced-degree graduates of our college. We acknowledge that many of the accomplishments in this book are directly attributable to the collaborative research and educational goals of these various institutions, and the synergistic relationships among them.



- 1. U.S. Agricultural Experiment Station (building: circa 1901).
- 2. College of Agriculture and Mechanic Arts (building: well prior to 1907).
- 3. Hawaiian Sugar Planter's Experiment Station (building: 1904).
- 4. Hawaii Department of Agriculture (building:1930).
- 5. Pineapple Research Institute (building: 1931).
- 6. Territorial Normal School (building: circa 1907).
- 7. USDA Fruit Fly Laboratory (building: 1931).
- 8. College of Hawaii's farm (1920).
- 9. Bishop Museum (building:1889).





Date of map: 1934

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| 1 Bishop Museum (est. 1889). | 7 Pineapple Research Institute (est. 1931). |
| 2 Bureau of Agriculture and Forestry of the Kingdom of Hawaii (est. 1893). | 8 Territorial Normal School (est. 1895). |
| 3 College of Agriculture and Mechanic Arts of the Territory of Hawaii (est. 1907). | 9 U.S. Agricultural Experiment Station Pensacola Street Station (est. 1901). |
| 4 College of Hawaii's farm (est. circa 1911). | 10 U.S. Agricultural Experiment Station Tantalus Substation (est. circa 1902). |
| 5 Hawaiian Sugar Planters' Experiment Station (est. 1895). | 11 U.S. Department of Agriculture Fruit Fly Laboratory (est. 1931). |
| 6 Kamehameha School for Boys (est. 1887). | |

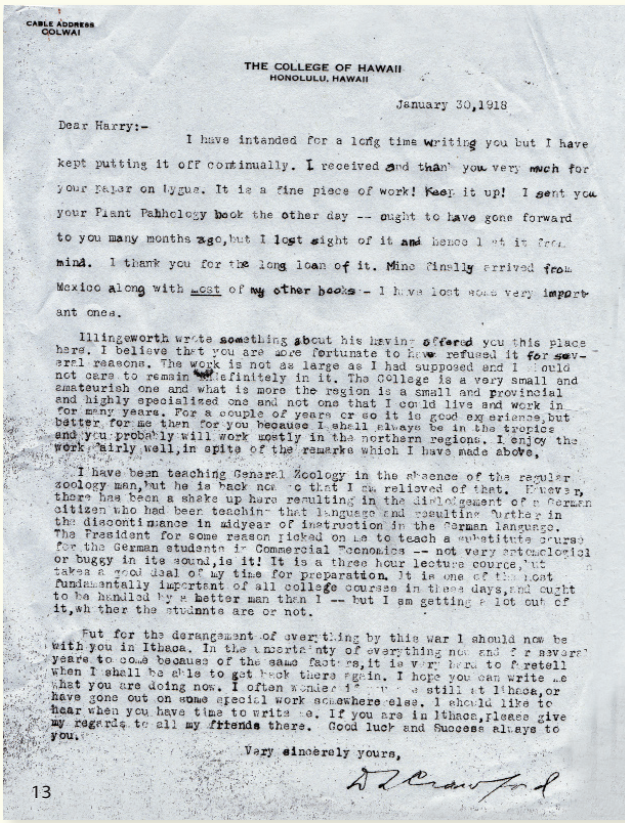


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- 11. David Crawford, third president of the University of Hawaii.
- 12. Royal N. Chapman, first dean of the Graduate School of Tropical Agriculture.
- 13. A letter Crawford wrote on January 1918 to a colleague at Cornell.



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who wanted to move the college from supporting agricultural education and diversified agriculture to supporting Hawai'i's burgeoning sugar industry. When Dean hired Herbert Walker to teach sugar technology, the sugar industry persuaded the Legislature to increase support for the college's growth. Dean's redirection of the college's goals paid off, and he continued to serve as president for the next 13 years.

During Dean's tenure, faculty members were often encouraged to apply their skills to building or beautifying the campus. Young, a civil engineer, laid out a plan for the campus that included buildings for schools of medicine, law, veterinary science, and architecture.

Arthur Keller, also a civil engineer, approached the City and County of Honolulu to borrow their road-laying equipment to build Campus Road, a 1600-foot "experimental" road connecting Metcalf Street and Maile Way. He and his students also laid the groundwork for a campus drainage system. Dean and Keller were strong advocates of giving students "practical experience." Joseph Rock, a botanist assigned to the college's Buildings and Grounds committee, developed a botanical garden for the campus. Between 1914 and 1918, Rock collected over 500 specimens from around the world for "ornamentation of the campus" and for course materials.

Expansion and Reorganization

From the beginning, as president, Gilmore had been well aware of the need to demonstrate that the college was capable of meeting the many expectations of the Legislature and the business community. The new land grant college needed to provide a formal education to qualified students, conduct research, and "render service" to the agricultural community Territory-wide. Fifty-one people signed up for a "Short Course in Agriculture," an evening course that began in February 1908, seven months before the first freshman class was enrolled. Agricultural seminars were offered to interested residents, and Gilmore and Young traveled to Hilo and Maui to give a series of demonstrations on agriculture and engi-

neering. In the first two years, Gilmore estimated the college's extension programs reached 600 people. Although there were no extension agents or specialists, the college's contributions to Hawai'i's agriculture and families had begun.

On the eastern slope of Punchbowl crater, a short distance from the college's temporary campus by Thomas Square, the U.S. Agriculture Experiment Station had been sowing the seeds of an extension program since its inception under federal auspices in 1901. Its researchers visited farmers, much like today's extension agents do. In 1914, Frederick Krauss, who had worked for the Experiment Station from 1905 to 1909, and for the college from 1910 to 1914, went back to the station to become its first superintendent of extension work, and, along with Mabel Green and Harvey Willey, started Hawai'i's first 4-H programs.

From this humble and somewhat tenuous founding in 1907, the College of Agriculture and Mechanic Arts grew, changing its name in 1911 to the College of Hawaii. In 1917, President Dean hired David Crawford, who had been teaching botany and biology at Pomona College in California, to teach entomology. When he arrived, Hawaii Hall was still the only permanent building on campus. In a 1918 letter to a colleague at Cornell, Crawford described the college as "a very small and amateurish one and...not one I could live and work in for many years."

On July 1, 1920, the College of Hawaii became the University of Hawaii. Existing departments were separated into two colleges, Applied Science (which included agriculture) and Arts and Sciences. The following year, Crawford became the director of the College of Applied Science's extension program, a position that would give him considerable insight regarding the needs of Hawai'i's agricultural community. Crawford also persuaded Krauss to return to the college to continue his extension work.

Crawford remained director until 1927 when, at the age of 38, he became the third president of that "small amateurish college." Crawford would go on to serve longer than any UH



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FACULTY



DEAN KELLER

COLLEGE OF APPLIED SCIENCE



LOUIS A. HENKE J. M. WESTGATE FRANK T. DILLINGHAM CARL B. ANDREWS JOHN S. DONAGHE



ERNEST C. WEBSTER HAROLD S. PALMER CAREY D. MILLER ANNA B. DAHL WILLARD H. ELLER

During the past few months, magazines and newspapers have printed many articles attempting to show that the application of technical methods to the everyday problems of life is the cause of the present economic distress. It has become the work of the men and women trained along technical lines to justify their training by solving these problems. There is something wrong in a world that allows farmers in one section to burn grain while in another section coal miners are idle and starving, the storage bins full, no demand for coal and consequently, no bread. During the coming years, the present generation of

students must solve these problems.

The present trend in technical education is toward a better and broader foundation in the basic sciences, and, in Hawaii, such courses are now being offered during the late afternoon and evening hours as well as during the morning periods. The technically trained graduates must readjust our economic conditions so that there will be no future recurrence of the present unfortunate situation. The students of this university will have a part in bringing about this readjustment.

ARTHUR R. KELLER

14. Faculty of the College of Applied Science. Louis Henke, John Westgate and Carey Miller had distinguished careers with the college (Ka Palapala 1933).

Farmers' Institute—Extension's Forebear

Eileen C. Herring

With the creation of land grant colleges by the 1862 Morrill Land Grant College Act and establishment of the complementary system of experiment stations under the 1887 Hatch Experiment Station Act, agricultural education in the US embraced both instruction and research. However, until the 1914 establishment of the nationwide Cooperative Extension Service outreach system, experiment station personnel needed a mechanism for their scientific work to be conveyed to farmers.

Farmers' Institutes were created to fill this need. A few similar groups had been organized in the mid-1800s, but the movement gained momentum with the establishment of the experiment stations. By 1899, 45 states and territories had started Farmers' Institutes, with agriculture college personnel and successful local farmers serving as advisors and speakers at meetings. In 1903, USDA obtained funding for the position of Farmers' Institute Specialist to assist in the coordination of these groups' activities.

HAES Special Agent Jared Smith began the Farmers' Institute here with an organizational meeting on January 25, 1902, in Wahiawa; members paid annual dues of \$1.00. The goal of the organization, spelled out in the 1903 Proceedings of the First Annual Meeting, was "to bring before the practical men, the farmers themselves, the results attained by the Experiment Station worker and the college instructor." Some 3,000 copies of the proceedings were distributed in Hawai'i and on the mainland.

During the first year, six meetings were held—four on O'ahu and two on Hawai'i—and the groups continued to meet a few times a year on O'ahu. Papers were presented on a variety of crops, including pineapple, potato, castor bean, papaya, avocado, banana, and coffee. Topical presentations included vegetable gardening, cooperative marketing, and "fruit culture as an industry in Hawaii." Starting with the second annual meeting, the institute minutes and papers were published in *The Hawaiian Forester and Agriculturist*. In 1904, the institute reported having 72 active members.

The Farmers' Institute, along with the Hawaiian Poultry Association, organized the Territorial Agricultural Exhibits in 1906 and 1908. Institute members also voted to petition the U.S. Secretary of Agriculture to assign a tobacco expert to Hawai'i and to assist in a soil survey.

Jared Smith led the organization as president until 1908 and was succeeded by Willis Pope, acting dean of the new College of Agriculture and Mechanic Arts. In his address to the sixth annual institute meeting, outgoing President Smith stated, "The Farmers' Institute is primarily an educational institution... [It] stands in the same relation to men and women who have passed out of the schools into the practical work of earning a livelihood, as the college to its students.... It is, therefore, a pleasure for me to turn over this Farmers' Institute work to the head of our new Agricultural College."

After 1908 the Farmers' Institute was no longer mentioned in *The Hawaiian Forester and Agriculturist*, and the college stepped in to provide special afternoon and evening lectures and demonstrations on agriculture and subjects of public interest. By 1911, the college had instituted correspondence courses, short courses, agricultural seminars, and "movable schools" that brought public lectures to the neighbor islands.

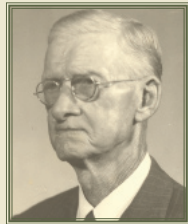


Extending Our Reach - Cooperative Extension Service

James R. Hollyer



1. The Agricultural Extension Service was officially inaugurated on September 1, 1928 with Governor Wallace R. Farrington signing an agreement with the Federal Extension Service, whose representative, William A. Lloyd, is third from the left. L-R: Ernest Akina (President of the Territorial Senate), David L. Crawford (President of the University), Lloyd, Elmina White (Assistant Director for Home Economics), and Frederick Krauss, who became the first resident director the next year.
2. The first Agricultural Extension Service logo.



Frederick George Krauss
May 6, 1870 – June 4, 1962

Agriculturist
1905 – 1936
(non-continuous service)

Considered Hawai'i's "father of 4-H" and "father of diversified agriculture," Krauss' enthusiastic guidance earned the respect of all who were interested in the potentials and problems of Hawai'i agriculture. His New Era Homestead farm in Haiku, Maui, was home base for much of the early federal extension work and became a proving ground for many agricultural ideas, including the first 4-H swine club.

Federally supported agricultural research work started with the establishment of the U.S. Agricultural Experiment Station on O'ahu in 1901, but it quickly spread to Hilo and Glenwood on Hawai'i, a homestead on Kaua'i, and various locations on Maui. These stations included outreach programs for farmers in their communities. Today's Cooperative Extension Service program has its roots in the Hawaii Farmers Institute, started by Experiment Station employees Jared Smith (president), Thomas Sedgwick (vice-president), and Delos Van Dine (secretary and treasurer) in January 1902. Although the Farmers Institute faded away soon after the College of Agriculture and Mechanic Arts was founded, station employees continued to share the results of their research during field visits to farms. They also provided farmers with plants from the various research stations.

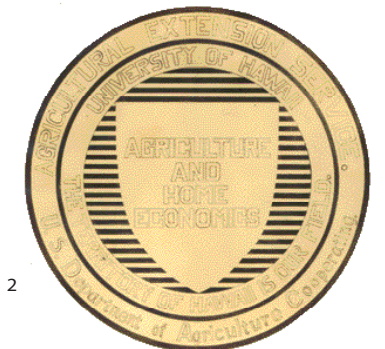
The 1914 Smith-Lever Act authorized the Congress to fund agricultural colleges so that they could "aid in diffusing among people of the United States useful and practical information on subjects relating to agriculture and home economics, and to encourage the application of the same." The Experiment Station received no Smith-Lever funds and had to rely on "other" federal funds for its extension programs. Although the college provided agricultural correspondence courses and short-courses as early as 1908 to meet the interests of farmers, the federal government determined that it was not eligible for Smith-Lever funds. The territorial legislature likewise failed to provide needed funding.

Around 1912, Frederick Krauss uprooted his family from Honolulu and took them to Maui, where he established the New Era Homestead farm. Many people had given up on diversified agriculture by this time, and he was determined to show that it had a future. New Era Homestead became a research and demonstration farm for crop and animal production. By 1914, Krauss had initiated formal extension work territory-wide. He wrote that getting a telephone at the farm greatly increased his ability to reach out.

With the signing of the Hawaii Act in 1928, the University of Hawaii's College of Applied Science secured Smith-Lever funds, and today's Cooperative Extension Service was born. Frederick Krauss, who assumed leadership of CES in 1929, wrote that its goal was "to give useful instructions and practical demonstrations in agriculture and home economics to persons not attending or resident in the university and by this means to promote better methods of farming and rural living....Men and women county agents and specialists in Home Making, Gardening, Poultry Raising, Animal Husbandry and Forestry lend valuable assistance to this work."

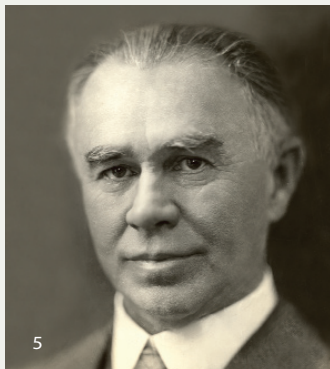
By 1940, extension agents were operating from nine field offices in Wailuku, Hilo, Kohala, Kealahakua, Lihu'e, Kaunakakai, Honolulu, Wahiawa, and Kane'ohe. Each office had at least one agricultural agent and one home demonstration agent; in larger offices there were assistant agents as well. After the bombing of Pearl Harbor in 1941, extension offices received huge numbers of telephone calls requesting assistance, as extension agents were considered the most important link between the government and the territory's rural areas.

Extension employees have served thousands of youth and adults in Hawai'i, touching the lives of many kama'aina, and urban ones as well. Many of their activities and impacts are described throughout this book. Today's extension workers, found on Manoa campus and at 10 Cooperative Extension Service offices throughout the islands, are well prepared to build on the proud tradition and accomplishments of their predecessors.



In Honor of the Extension Hibiscus

One of the oldest artifacts of Hawai'i's Extension Service is 'Minnie Lee', the Extension hibiscus. This large yellow flower with a pinkish-red throat became a revered symbol of our statewide outreach organization. A cross between the 'Agnes Galt' hibiscus and a "common yellow" variety, 'Minnie Lee' was bred by Mr. A.M. Bush and first planted on Maui on May 25, 1929, about a year after the Extension Service officially started in Hawai'i under Smith-Lever funding. Later that year, it was planted with great fanfare on Manoa campus at the first annual Territorial Extension Conference. The hybrid is named for both the wife and daughter of William Lloyd, who came here from Washington, D.C. for a year to formally establish the Extension Service. Lloyd fancied himself a poet and wrote a 24-line poem, *Ode to the Extension Hibiscus*. In 1937, Extension Service director Howry Warner asked Irmgard Farden Aluli, a musician and O'ahu extension agent who was working on Moloka'i with 4-H groups, to craft music for the ode. Irmgard could neither read nor write music, so she enlisted the help of Moloka'i's Halawa school principal, Mr. Kaupu, to transcribe the actual score. Expanding on the 4-H motto, Lloyd's poem noted that in Hawai'i 4-H is actually 5-H: Head, Heart, Hands, Health, and Hawai'i. This lovely flower is also the official flower of the Hawai'i Extension Homemaker's Council.



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Ode to the Extension Hibiscus

Dean W. A. Lloyd: Irmgard Farden Aluli

1. Here's to the roy-al hi-bis-cus, whose
 2. It's warm as the sun of Hawai-i, this
 3. Five pet-als stand for our club work, the
 bloom we all love so well, the flower of dear old Ha-
 red throat-ed spirit of love; its' petal like lips that have
 motto we hang on the wall; 4 - H's plus one for Ha-
 wai - i, of all our gay beau-ties the belle, one
 part - ed to kiss-es that come from a - bove oh,
 wai - i, and hi-bis-cus stands for them all, head
 spe-cial hi-bis-cus is dear-est, the best of the
 hi-bis-cus yel-low hi-bis-cus, with the red and the
 heart, hand and health we are pledg-ing, to work for Ha-
 fam-ily by far; the yel-low ex-ten-sion hi-
 gold of the sun; this flow-er for ex-ten-sion
 wai-i our own; so here's to the yel-low
 bis-cus, that glows like a bright morning star
 is chas-en, to stand for the good work begun,
 hi-bis-cus, our aloha for farm and for home.

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5. William Lloyd.
6. Irmgard Farden Aluli.
7. Ode to the Extension Hibiscus.
8. The Extension Hibiscus.
9. Planting the first Extension Hibiscus on Maui on May 25, 1929, most likely with 4-H club members.



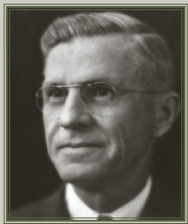
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15. View of the Manoa campus from Tantalus (1974).



David Livingston Crawford
March 7, 1889 – January 16, 1974

University President
July 1917 – October 2, 1941

The first director of the Hawai'i Agricultural Extension Service, Crawford became the third president of the university. His book, *Hawai'i's Crop Parade*, comprehensively described crops tried in Hawai'i. He was an active proponent of diversified agriculture and influenced the development of citrus, banana, papaya, pineapple, and several vegetables as economic crops.

president and leave behind a legacy of major accomplishments. In 1928, he reached an agreement with the Experiment Station to bring its research and extension functions under joint university and federal government supervision. William Lloyd, a USDA employee, facilitated the merger of the university's agricultural extension program with the Experiment Station's extension division and served as the first director of the new Agricultural Extension Service. The following year, with his job completed, Lloyd left and Krauss became the director of CES, a position he would hold for six years. In the college's first 25 years, it would hire some of the most significant scientists and instructors in its history, including Charles Bice, Carey Miller, Harold Wadsworth, Louis Henke, and Earl and Lenora Bilger, to name just a few. In 1938, the Experiment Station completed transition to the university and became its agricultural research arm, bringing with it a host of research talent.

Under the auspices of the university's graduate school, Crawford also established the Graduate School of Tropical Agriculture in 1931, with Royal Chapman of the Pineapple Research Institute serving as its first dean. PRI was located adjacent to the college on Dole Street, making it easier for Chapman to continue his work with PRI. Shortly thereafter, researchers from the Hawaiian Sugar Planters' Association, located at Ke'eaumoku Street and Wilder Avenue, added their research expertise to that of PRI and the campus faculty. This collaboration provided a large number of faculty, across a large spectrum of science, to direct the college's graduate student research and training. In October 1941, Crawford would leave, ending, after 14 years, the longest presidency in the university's history.

Food shortages in the territory related to World War I (1914–1918) had prompted the college to emphasize development of diversified agriculture, despite the earlier pull from the sugar industry to promote a sugar technology program. The Great Depression (1929–1939) had a similar effect, with sugar and pineapple markets brought to near collapse.

Congressional passage of the Sugar Act in 1934 provided badly needed federal funds for the college to hire researchers and extension specialists and agents to once again promote diversified agriculture.

The College of Agriculture was established in 1947 when faculty from the Cooperative Extension Service and the Experiment Station merged with the agriculture and home economics teaching faculty in the College of Applied Science. Harold Wadsworth served as the new college's first dean. Twenty-three years later, under the leadership of Dean C. Peairs Wilson, the college was renamed the College of Tropical Agriculture, emphasizing the tropical nature of Hawai'i's environment and agricultural commodities.

Extension agents, who were trained as generalists, worked well with most of Hawai'i's farmers, providing them with research-based knowledge about their crops. However, as the more knowledgeable farmers expanded their operations and became more business-like, they sought more specialized assistance from the college. As it had in 1930, the college responded in the early 1960s by hiring specialists, this time in beef, poultry, swine, and sugar production. The number of specialized faculty also increased when five Pineapple Research Institute researchers joined the college after PRI closed in 1967.

In 1978, Dean William Furtick brought the Cooperative Extension Service and the Hawaii Agricultural Experiment Station even closer together to create the Hawaii Institute of Tropical Agriculture and Human Resources (HITAHR). Research and extension faculty were administratively included in the newly renamed College of Tropical Agriculture and Human Resources. Many of the faculty had split appointments to include research, teaching, and extension responsibilities. From 1979 to 1995, the college was lead by Noel Kefford, an astute and effective administrator, under whose leadership the college added positions and buildings while fending off efforts of politicians to move the college to Hilo.

When the sugar and pineapple industries began downsizing in the 1990s, UH administrators saw an opportunity

to downsize the college. College administrators took the opposite view, arguing that Hawai'i needed to take advantage of newly vacant land to expand diversified agriculture, particularly ornamentals, fruits, and vegetables. Higher administration prevailed, and the college began a painful downsizing, losing faculty, staff, and students.

At the end of 1999 and a three-year strategic planning process led by Dean Charles Laughlin, HITAHR was dissolved and a new administrative structure created. Associate deans for research, extension, and academic affairs were hired, academic departments were reduced from 11 to 6, extension agents became departmental faculty, and county administrators were reclassified as management. Presiding over the implementation of the strategic plan, Dean Andrew Hashimoto filled vacant positions, increased research and extension funding, and responded to community and statewide needs. Enrollments increased, working relations with the Legislature improved, and a new strategic plan developed.

The college begins its second century focused on student needs, diversified agriculture, sustainable environments, and stronger families and communities—familiar themes for the college's most visionary and successful leaders.

Then and Now

The college's growth during the past 100 years has been nothing short of remarkable. From a combined territorial and federal budget of less than \$50,000 in 1907 (about \$1 million in 2006 dollars), the college's current budget is nearly \$48 million. Funding comes from many sources, including state funds and tuition (\$21 million), federal formula funds (\$4 million), and contracts and grants (\$23.5 million). From the two original preparatory class instructors (Willis Pope and Rev. William Potwine) of February 1908, the college now employs nearly 550 faculty and staff. These include 192 full-time faculty, 48 classified as administrative, professional, and technical staff, 127 civil service employees, 21 half-time graduate assistants, 9 executive/managerial staff, and approximately 150

temporary staff hired on contracts and grants.

College enrollment has increased from the original five provisional students to 618 undergraduates and 218 graduate in the fall of 2007. The college now counts over 10,500 graduates among its alumni. Tuition was free in 1908. One hundred years later (2007–08), undergraduate tuition for Hawai'i residents is \$5,136 plus fees of \$200 or more.

The college's original 90 acres on the Mānoa campus, most of it once devoted to agriculture, have grown to include over 1,600 acres of off-campus facilities, including 22 research stations, farms, and centers, as well as nine extension offices and centers. Although the college now occupies less acreage on the Mānoa campus than at any time in its history, the loss is more than made up for by these off-campus facilities and resources. The Mānoa campus facilities have grown from shared space in Hawaii Hall to over 300,000 square feet of laboratories, offices, and classrooms located primarily in seven major agricultural buildings (Gilmore, Agricultural Engineering, Miller, St. John Plant Science Laboratory, Agricultural Sciences III, G. Donald Sherman Laboratory, and Pope Environmental Laboratory). Today's replacement cost for each of these buildings is estimated to be between \$30 and \$50 million.

One hundred years ago, the college “borrowed” five students from the Territorial Normal School and at times considered mergers with Oahu College (today's Punahou School) and Mid-Pacific Institute to ensure its survival. Today, its dependence on other schools is no longer a factor in its survival. Indeed, the college has much to offer other colleges and universities and currently has active memoranda of agreement promoting student and faculty exchanges with 19 agricultural colleges throughout the Pacific and Southeast Asia.

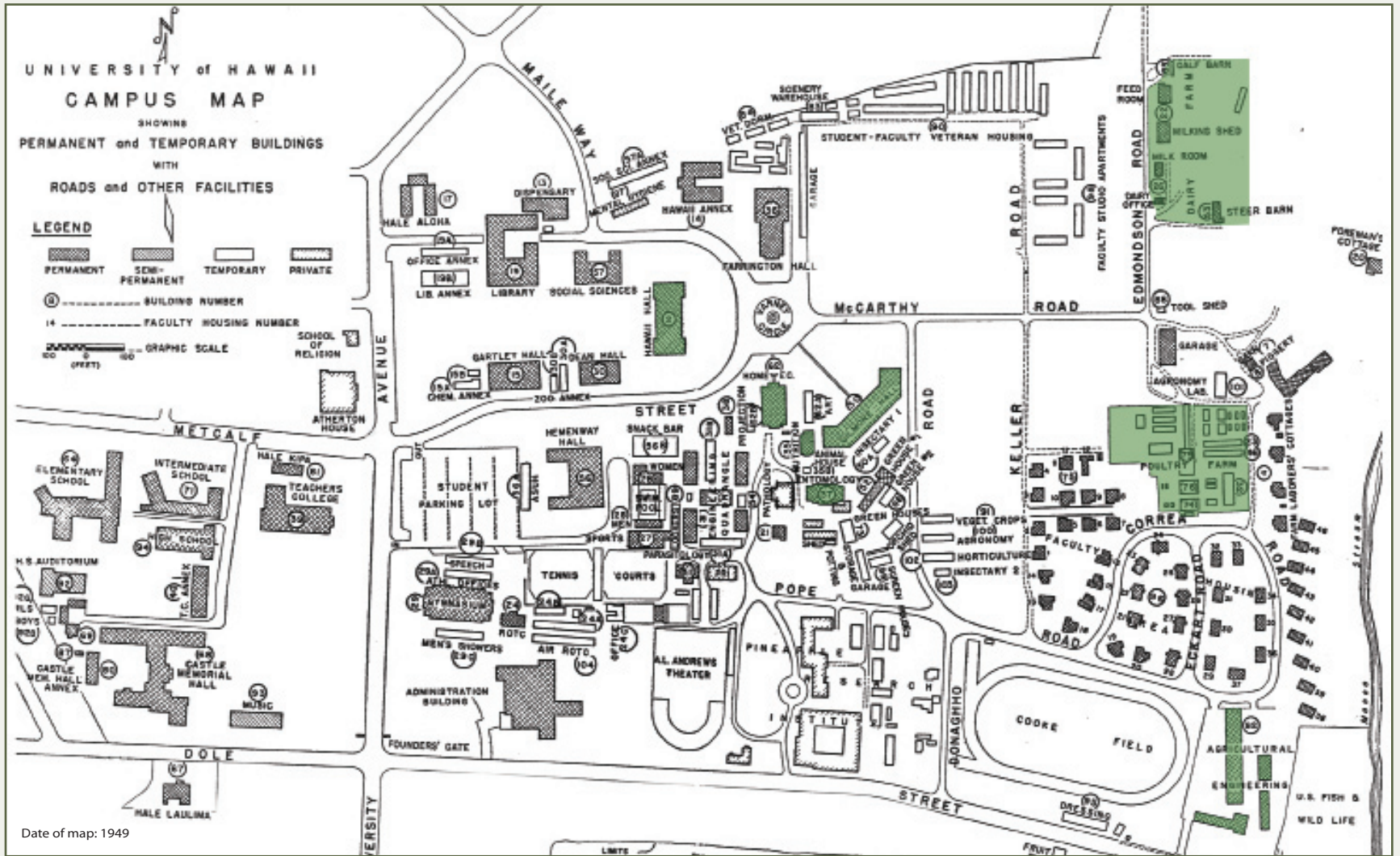
Although these are only “then and now” numbers, they reflect the faith of the Board of Regents and the Hawai'i Legislature in the college's ability of meet its tripartite goals of teaching, research and extension. The Legislature, regents, faculty, staff, and students have much to be proud of.



16. Kamehameha butterfly mural on Gilmore Hall.



17. William R. Furtick, dean from 1976 to 1979.



Date of map: 1949

1. USDA Fruit Fly Laboratory (1931).
2. Hawaii Hall (1921).
3. Nutrition Laboratory (1930).
4. Poultry shed.
5. Agricultural Engineering Institute (1947-1972).
6. Miller Hall (1939).
7. The first Gilmore Hall (1935-1975).
8. Dairy herd on Manoa campus.





Date of map: 2006



1. Agricultural Engineering (1973).
2. Miller Hall (1939).
3. Gilmore Hall II (1977).
4. Krauss Hall (1967–1976).
5. Henke Hall (1956–1999).
6. St. John Plant Science Laboratory (1971).*
7. G. Donald Sherman Laboratory (1985).
8. Magoon Research and Instruction Facility (1976).
9. Food Science and Technology (1951).
10. Pope Environmental Laboratory (1973).
11. Agricultural Science III (2000).

*shared with College of Arts and Sciences.

Other named CTAHR buildings:

Beaumont Research Center (1961, Hilo, Hawai'i) and Bice Hall (1962, Waiale'a, O'ahu),
Tadashi Higaki wing of Komohana Research and Extension Center (2008).