

TAU BETA PI The First Century

by Nancy B. Hild



Williams Memorial Dedication, October 11, 1930

A.P. Miller, Secretary, Washington Alumni; F.W. Marquis and P.W. Ott, Executive Council; D.A. Gurney, President, Washington Alumni; C.H. Spencer, Chairman, Williams Memorial Committee; W.T. Magruder, A.D. Moore, and H.H. Higbie, all of the Executive Council; Dr. Edward H. Williams Jr., Founder of Tau Beta Pi; Henry K. Bush-Brown, sculptor of the Memorial; Mrs. Williams, Dr. Charles Russ Richards, President, Lehigh University; John C. Mertz, President, Pennsylvania Alpha; Dr. Benjamin L. Miller, Lehigh University professor of geology; Wentworth Williams, son of the Founder and unveiler of the Memorial.

The Early Years

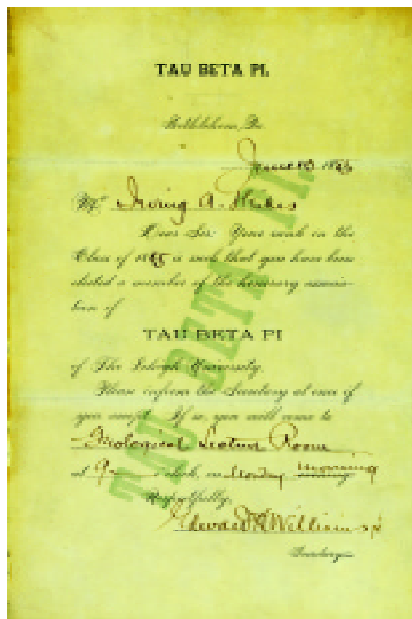
Forty-five years after the birth of Tau Beta Pi, representatives from the 29th annual Convention gathered on a slope in front of Williams Hall at Lehigh University and paid homage to their founder. It was Saturday afternoon, October 11, 1930.

In the audience was a small, silver-haired man whose hearing was so impaired he strained to catch the words meant to honor him. Professor Williams, educator, geologist, engineer, and author, had come “home” one last time. As he stood before the building he gave to Lehigh University when he left its faculty in 1902, he heard geology professor Benjamin L. Miller (*PA A 1897*) say Tau Beta Pi had lived in a period of the most rapid industrial development in all human history, and that it had done for technical students what Phi Beta Kappa had done for liberal arts students. It had dignified the profession.

When Miller finished, young Wentworth Williams stepped forward and unveiled a bronze bust of his father attached to a boulder from nearby Saucon Valley, an area once studied in great detail by the senior Williams.

His son was to write of that occasion that nothing could have made his father happier than to stand there “as your founder, and witness the unveiling of a monument to his work.” Three years later, Dr. Edward H. Williams (*PA A 1875*) was dead at the age of 84. He had lived to see his idea expanded to 63 chapters and 22,000 members.

Irving Andrew Heikes was valedictorian of his class at Lehigh University in 1885. He was a slight man with a huge bushy mustache, receding hairline, and protruding ears. Professor Williams decided he was the perfect candidate to become the first member of a new organization he wanted to start, an honor society for engineering students that would parallel Phi Beta Kappa. Williams had been unsuccessful in convincing that society to broaden its qualifications for membership so that students in engineering and science would be eligible. When he talked about his idea with alumni at Lehigh who would be eligible to join an engineering honor society, he received enthusiastic response. Within a few months he had selected a name, written a constitution, and prepared all the essentials for such an



Irving Heikes, Tau Beta Pi's first member. The photo was taken by Founder Williams at the time of Heikes' initiation. Heikes initiation certificate is pictured, left.



Dr. E.H. Williams Jr. in 1885 when he founded Tau Beta Pi.

organization. Toward the end of the school year he approached Heikes with his plans and invited him to accept membership. Heikes hesitated a few days, then halfheartedly accepted.

Williams and Heikes were the only two people to witness that first initiation. It was Monday, June 15, 1885, three days before commencement.

"He may have had a vision for the future of the society, but I certainly had not," Heikes wrote to a colleague.

Two other members of the class of 1885 were later awarded membership by Williams and Heikes. Heikes wrote some years afterward:

"Professor Williams chose ... me as the *Adam* of the Association of which he was the Creator, and breathed into me the *breath of life* by giving me the grip and password."

By 1886 there were 14 members of Tau Beta Pi. But no regular meetings were being held. Details were still being worked out, mostly concerning the Constitution and Bylaws, but even the selection of colors was not overlooked. Tau Beta Pi came by its seal brown and white colors because they are Lehigh's colors. And Lehigh borrowed them from the colored stripes on the stockings of a girl who happened by the day such matters were decided. So the story goes.

For seven years Pennsylvania Alpha remained the only chapter of Tau Beta Pi. The society took time to mature, to experiment, to gain a sense of identity.

"It was not a handicap that a number of years passed before chapters were authorized at other institutions," wrote the organization's first president, Henry S. Jacoby (*PA A 1877*). "It permitted the Mother Chapter to give the benefit of her more mature experience to the early life of the new chapters."

In 1892, Lester Breckenridge (*PA A 1881*), a professor in mechanical engineering at Lehigh, transferred to Michigan State University. It was not long before he established the second chapter of Tau Beta Pi. The following year, in the same manner, Professor John Flather (*PA A 1885*) transferred to Purdue University and organized the third chapter. The seeds of expansion had been planted.

Growth and Leaders

GOVERNANCE

Founder Williams knew Phi Beta Kappa because he was a member at the Yale chapter. Among the differences between it and Tau Beta Pi that he determined to effect was the basic governance of the new organization. Tau Beta Pi was to be controlled by students at both the local chapter and national levels. His system remains to this day.

The supreme legislative, executive, and judicial body of Tau Beta Pi is the annual national Convention, where through a student delegate each collegiate chapter has a single vote. Since the collegiate chapters have long outnumbered the other franchised groups—national officers and alumnus chapters—the student members have the preponderant balance of power at the Convention and all the power in the Constitution-amendment-ratification procedure. At the local level, chapter offices are regularly filled by students, except for the four alumnus advisors. Any proposals that might seem to diminish the power of student members, in favor, say, of national officers, are doomed to failure. This is at once the strength and a weakness of Tau Beta Pi. Members never forget that they had a vital part in running the organization when they were students, and their loyalty remains strong for the rest of their lives. But students remain active for a short time because they are junior or seniors. Thus, each year it is necessary to train student leaders in the basic purposes and operations of Tau Beta Pi.

The Constitution, as drawn by Founder Williams, called for an annual Convention when three chapters of Tau Beta Pi had formed. Thus, in May 1895, a decade after Heikes and the others banded together at Lehigh, delegates from the three existing chapters convened in Cleveland, OH, a city easily accessible to members of the three chapters. This Convention elected the first Executive Council and, in effect, established the national organization in the pattern created by Dr. Williams.

The Beginning

In 1912, Founder Williams wrote his view of the establishment and early years of Tau Beta Pi:

"... Now, too many cooks spoil the broth of society building; so, I decided to take nobody into my confidence. I knew what I wanted, and I went to work alone.

"I first drew up a constitution and provided for granting new chapters, for an executive council, and for alumni advisers to act as a balance wheel to keep things going in line, and I made it hard to amend this instrument. I then drew up By-laws for Lehigh.

"Next, there must be a body of alumni behind the affair before the first undergraduate was let it. I delivered the valedictory for '75 and so was eligible to the society. I took the old faculty records and calculated the standing of every man who graduated during his four years; drew up a list of the men in the order of their stand. They must be in the first fourth of the class and also have a general average of 75. Having the eligible men of the past, I had Edwin G. Klose, of the Moravian Book Concern, buy a series of special fonts of type, which are now in the possession of the society, a lot of electrotypes of the society key, and some other matter and print a lot of diplomas. . . I signed them as secretary, to which office I elected myself. The answers I received from the boys were refreshing. One valedictorian said he would value it more than his diploma.

"Then, I had my friend Newman, of John St., New York, file out a society key to see how the thing looked. Then, I was ready for the undergraduates. I went slowly, however, and it was May, 1885, before I told Irving A. Heikes, the best man in '85, to stop after recitation one morning and asked him if he would like to be the first undergraduate to join a society. He wanted to think it over, and finally said 'Yes,' so I initiated him. He took post-graduate work, I think, and in the fall he and Professor Meaker, who helped me initiate the classes for several years; and Duncan, '80, initiated the men from '86 and the Wilbur man from '87.

"For several years I was elected president of the society and directed the body til it began to have a good number of alumni and many representatives in the Faculty. It took like hot cakes and soon its elections were looked for.

"I wanted to have Tau Beta Pi in full blast before Phi Beta Kappa came, as it would not then be looked upon as an imitation by a lot of men who could not get into the latter. In deference to the general tradition, I limited the membership in Phi Beta Kappa to students in the liberal courses, and I had the charter given to a council of a few graduate members, Mr. Kitchel, Albert G. Rau, myself and a few others.

"This is the way Tau Beta Pi came to Lehigh. It was the culmination of a lot of work covering four years. I could not give as much time to it as I wanted, owing to the growth of my department. Breckenridge was elected an honorary member. Heck became president and a member of the advisory board, and then it began to form chapters outside. While the founding is wholly my own unassisted work, the spread is due to others. . ."

Executive Council

It was to be the function of the Executive Council to mold the chapters into a cohesive unit, "with one head, one government, one purpose." In time, the Council, acting as a board of directors, would oversee the national program of Tau Beta Pi.

But first, some rudimentary functions needed attention. Two of the first three Executive Council members met later that summer of 1895 in the old Cincinnati Grand Hotel to appoint themselves president, secretary, and treasurer. They ordered some stationery, tended to other details, and went home to assume their historic roles.

Much of the responsibility for the success of the Association has rested since then with the Executive Council. It takes care of such routine business as issuing publications and certificates. It implements the Association's policies, launches growth campaigns, and provides guidance to the national organization and chapters.

One of the earliest duties for council members was to sign each electee's membership certificate. In those days they were printed from a font of type belonging to Professor Williams. No two Council members were located in the same place, so it was a slow and expensive process to pass the certificates to each Council member for his signature.

But the problem highlighted the inconvenience of having a geographically scattered Executive Council. In 1923, Convention delegates finally adopted an idea called the "package" council. The Convention was to elect representatives from alumni who live in the same locality, and they would serve three-year terms. The 1923 Convention also decided that the Secretary-Treasurer would no longer be a member of the Executive Council, subject to re-election every term. He would be an alumnus member appointed by the Council to serve an indefinite term.

Matthews

So it was that one of Tau Beta Pi's most colorful leaders, R.C. "Red" Matthews (IL A '02), who had been elected secretary in 1905 and re-elected every year thereafter, was retained in 1923 as the first appointed Secretary-Treasurer until his retirement in 1947. Matthews held the post on a part-time, honorarium basis for 42 years. His leadership spanned four decades of exciting growth for Tau Beta Pi. In 1905, twenty years after its birth, Tau Beta Pi had 11 chapters. By 1920, there were 32. And by 1946, the organization had 79 chapters, an increase under Matthews' administration of 68 new chapters!



The 1905 Convention of Tau Beta Pi, held at the University of Illinois, elected R.C. Matthews (second row, first on left) permanent national Secretary of Tau Beta Pi. This photo, long lost from the Association's archives, was given in 1960 to Mr. Matthews by C.R. McCollom, MI 1906, (first row, first on left), and over the years Mr. Matthews' painstaking research has identified all of these 1905 delegates, representing 11 of the then 13 chapters. Others include L.P. Breckenridge, PA 1881 (third row, far right), then president of Tau Beta Pi; E.J. Mehren, IL 1906 (fourth row, second from left), co-author with Matthews of Tau Beta Pi's first initiation ritual; and H.B. Dirks, IL 1904 (back row, second from left), later dean of engineering at Michigan State and Editor of THE BENT. Professor G.A. Goodenough, MI 1891, Mr. Matthews' predecessor as Secretary, is not pictured. The obscured picture held by 1905 Convention Chairman O.L. Kowalke, WI 1906, is one of Founder E.H. Williams Jr. that always hung on the wall of Prof. Breckenridge's office.

Matthews' tenure saw hard times, too. From 1905 to 1913 he ran the Tau Beta Pi office virtually alone. In 1907 he moved it from the University of Illinois, where it had been established by Prof. G.A. Goodenough (*MI A 1891*) on his election as Councillor-Secretary in 1904, to Estabrook Hall on the University of Tennessee campus in Knoxville. At that time there were 18 chapters and 2,161 members. Red's office help consisted of "one good typing finger and battered old machine." He was teaching full time in addition to doing his Tau Beta Pi work.



He was able to hire an assistant from 1913 to 1918, but when war conditions interfered, the organization began to slide. By 1923 the internal condition of Tau Beta Pi was not good. There were 15,000 members in 45 chapters, and one man was trying to run it all. A far-flung Executive Council never got together except at Conventions. A fire in 1920 destroyed Williams' Woodstock, VT, home and all the Tau Beta Pi original records stored there.

During the next decade some spectacular things happened in Tau Beta Pi, all deriving from the intense interest and devoted work of a number of men. Prof. A.D. Moore (*PA Γ '15*) of the University of Michigan was elected to the Executive Council in 1923. He quickly saw that a growing organization needed strong leadership at the national level, and he invented and sold to the 1924 Convention the idea of the "package" Council, by which the three members of the Council, required to live near each other, would be elected for a three-year term and would appoint the Secretary-Treasurer. Under this plan, the Council was able to meet frequently, resolve administrative problems, have time to lead, and free Matthews, a Council member since 1905, for the daily work of running the organization.

In two Council terms Moore invented THE BULLETIN, the Fellowship Program, and the Bent life subscription plan. He would be the first to insist that he had much help from others, but he was responsible for bringing into the officer-ship of Tau Beta Pi others who also helped.

The Ohio State University Council, elected for two terms starting in 1930, reworked the Constitution and By-laws of the society into a codified form that continues to serve well to this day. It also created the Student Loan Program, which has given financial aid to 1,373 members, and it led in the vital task of organizing the scheme for bringing skilled and prudent management to the conservation

and investment of the Association's growing financial assets.

These efforts saved the organization from fiscal and membership stagnation, but other forces were at work barring a healthy recovery. The artists and intellectuals of the so-called "Lost Generation" of the 1920s were waging their rebellion against a materialistic, decadent culture. By 1927, bread lines were beginning to form, and foreclosures were spreading. Architects, bankers, and engineers, the backbone of the middle-class who had spent the last decade in pecuniary pursuits, were not swallowing ammonia and driving their cars into dark alleys to shoot themselves. Some saw America as a dying civilization.

Tau Beta Pi could hardly avoid the consequences. Growth was slow—but surprisingly steady: two chapters in 1929, one in 1930, two in 1931, one in 1932, and 12 total for the decade.

It took another war to break the sluggish pace. As Hitler marched across Europe, the U.S. Office of Education requested an urgent speedup in the process of training student engineers. Engineering students flocked to the nation's universities. In 1941, five new Tau Beta Pi chapters formed. Then came Pearl Harbor. For the next five years Tau Beta Pi held no Conventions and chartered not one new chapter. Like America in general, it was the worst hiatus in history for the honor society of engineers.

Nagel

Meanwhile, Matthews unwittingly had selected his successor. In the summer of 1942, L.T. Monson (*MO* Γ '24), the



Editor of Tau Beta Pi's quarterly magazine, resigned suddenly as the result of a family illness. Matthews had to find a successor quickly. He asked a young engineer working for the Tennessee Valley Authority in Knoxville to edit the next issue. Robert H. Nagel (*NY* Δ '39) had first encountered Matthews as a graduate student at the University of Tennessee in 1940. Matthews knew Nagel had worked on the engineering student magazine at Cornell

University and that his work at TVA included writing reports. Nagel agreed to help Matthews "buy time" until another permanent editor could be found.

No editor was found. Nagel continued to edit *THE BENT* on evenings and weekends for five years. When Matthews retired from his post as Secretary-Treasurer January 1, 1947, Nagel was appointed his successor. He left his job at Southern Railway to become the first full-time salaried employee of Tau Beta Pi.

When Nagel took on the job full-time, it was to be an experimental combination of the part-time jobs of Secre-

tary-Treasurer and Editor of *THE BENT*. Prior to his appointment, these jobs had been filled on a part-time basis by staffers who also held full-time professional jobs. Could Tau Beta Pi afford a full-time paid professional staff? Would the work demand that much attention? The Washington, DC, Council, under the presidency of C.H. "Uncle Charlie" Spencer (*MI* Γ 1896), decided it soon would, if it didn't already. With accurate foresight the council predicted unprecedented growth in chapters, members, and financial strength in the post-World War II era. This Council, which was in office for 11 years because of the wartime hiatus, developed the plan for a full-time staff and presented it to the first postwar Convention, which approved it in 1946.

Nagel began his new job at a salary of \$4,600 a year, somewhat less than he was earning at the railroad company, but comparable to engineers with his experience in those days. It didn't take long for the organization to know it had done the right thing. Following World War II, students poured in the nation's engineering colleges, many going into electrical engineering as a result of the applications of wartime radar. By 1947, nuclear engineering was in the curriculum. Eight new chapters of Tau Beta Pi had formed before the decade was over.

In January 1950, Nagel moved Tau Beta Pi national Headquarters from its 43-year-old home in Estabrook Hall into Perkins Hall, a new engineering building on the University of Tennessee campus. The organization now had 85 collegiate chapters, 25 alumnus chapters, and 65,000 members. It was N.W. Dougherty (*NY* Δ '13), engineering dean, who offered space in the building to Tau Beta Pi. Fourteen years later, in 1963, the organization was to move again, this time into a modern suite of offices, designed specifically for the purposes of Tau Beta Pi in a new engineering building named for Dean Dougherty. On this Centennial anniversary, Tau Beta Pi Headquarters remains in Dougherty Hall.

The 1960s saw explosive expansion—31 new chapters. But the 1970s were to see the most phenomenal growth in the organization's history—49 new chapters, 22 of them the result of the merger with Sigma Tau.

Chapters form the backbone of Tau Beta Pi. It is their function to keep an eye on the work of individual members, to encourage them to greater efforts and more success. To facilitate this function, in 1975 the Executive Council proposed to the Convention a plan to divide the then 176 chapters of Tau Beta Pi into 15 districts. Each district would select a director whose job it would be to visit local chapters, hold district meetings with chapter representatives, and promote communication among the chapters through district newsletters. The plan was approved for a three-year trial, and proving successful, was adopted by the 1978 Convention.

The phenomenal growth of Tau Beta Pi in the 1970s and 1980s can be explained in part by an increasingly brighter job picture for engineers. A combination of economic conditions has contributed, too, including a pickup in oil and other energy developments, an expansion in the electronics field, continuing growth in computers and commu-

nications, and a revival of the aerospace industry. Engineers topped the list of starting salaries among college graduates nationally in 1980, and long-range predictions were that job opportunities would continue to expand for years to come.

As membership grew and the organization added more national programs, financial demands also increased. The late 1960s saw the inauguration of what was to become the Association's major source of revenue, the Alumni Giving Program. Contributions from alumni are used to support most national programs and the training of chapter advisors at the Convention. Alumni giving also enables the organization to stabilize its national membership fees.

Bob Nagel oversaw it all. He served the organization for more than 40 years, earning at various times such sobriquets as "the oil squirter who keeps those squawks down" and a prolific letter writer of "friendly persuasion," who was known to write two letters to the same person in one day. His woodworking hobby did not go unnoticed either, when he was honored at his retirement in 1982.

It was a healthy, thriving Tau Beta Pi he turned over to his successor, J.D. Froula (*TN A '67*). As Tau Beta Pi embarks on its second century of recognition and encouragement to outstanding engineers, Jim finds himself and 10 central office staff members serving 260,000 living members and 192 active collegiate chapters.

The Changing Face of Membership

In 1903 a young architectural student at the University of Illinois headed the class. Tau Beta Pi's Illinois Alpha was proud to elect this outstanding person, but the new member was soon at the center of a raging controversy. For this was no ordinary electee; this was a woman!

The Executive council that year refused to approve the female student's election to membership. Illinois Alpha appealed to the Convention, but delegates voted to uphold the Council's decision.

Until 1903 no restrictions appeared in the Constitution concerning eligibility based on gender. The document had been written at a time when there were no women in the profession, and it had been assumed that only men would join. To be sure such a misunderstanding never happened again, the Constitution was hastily edited to insert the word "male" wherever appropriate.

The ban on women remained intact until 1936 when Convention delegates decided to recognize with a token "badge" the growing number of achievements in engineering by women. It was a student from the University of Kentucky that year, who received the first Woman's Badge, a diamond shaped, black enamel pin edged in gold with a Bent in the middle. The Badge did not represent membership in Tau Beta Pi, and for 32 years afterward, the "Woman Question" appeared on the agenda of almost every Convention. Several times the necessary three-quarters vote



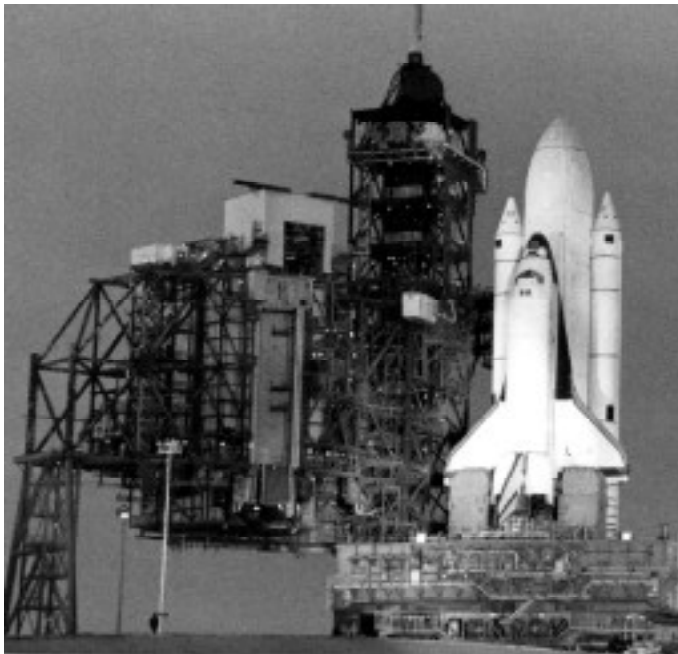
Katherine C. Harelson, KY '24, Woman's Badge Wearer No. 1 and later Tau Beta Pi's "First Lady" initiated into full membership in 1969.

of Convention delegates was achieved to amend the Constitution to include women, but the necessary three-quarters vote from three-quarters of the chapters could not be mustered.

By 1968 the national mood, and to some extent the law, had changed sufficiently to bring the issue to a head. Tau Beta Pi was one of the last remaining holdouts among honor societies banning women, and it was being severely criticized. Some alumni were refusing to support the association as long as the ban existed. Potential wearers of the Woman's Badge were refusing the honor, saying that they wanted equal recognition or none. The tide is believed to have turned irrevocably that year when some chapter delegates stood before the Convention saying they would lose their charters at their respective schools if the organization did not open its membership to women.

It was December 16, 1968, when the deciding ballot crossed the threshold of national Headquarters, pushing the vote in favor of admitting women. The final count was 104 yeses, eight noes.

The 619 wearers of the Woman's Badge did not automatically become Tau Beta Pi members, but they were all offered membership. The first initiations in 1969 saw 155 women become members. Of these, 97 had held the Woman's Badge. For the first time, two women were among the delegates to the annual Convention that year. It wasn't until 1978, a decade later, that Convention delegates finally removed all sexist language from the Constitution and By-laws and Eligibility code. Today, Tau Beta Pi includes 17,800 women (about 6% of the total membership but about 18% of the class of 1985).



The *Columbia* sits on the launch pad awaiting her maiden voyage

Twelve years after the first would-be woman member of Tau Beta Pi was rejected at the Convention, delegates convened at the University of California, Berkeley. At that time (1915) Asian-Americans had the same social position in California that Blacks had in the South. While increasing numbers of Asian students were entering engineering, California Alpha was not electing any of them. The 1915 Convention debated the issue of the inter-racial membership and voted to revise the Constitution to read that race and religion would have no bearing on membership. Thus, when the question of admitting Blacks to Tau Beta Pi arose in the 1930s, the Council was able to point to this Constitutional amendment as a clear mandate for full Black participation. By the 1950s, when schools began to integrate nationwide, the effect on Tau Beta Pi was, in a word, unremarkable. A few students were identified in a 1955 study by Secretary-Treasurer Nagel as having been denied membership on the basis of race. They were located and belatedly offered admittance.

There are no international collegiate chapters of Tau Beta Pi, but no restrictions have ever existed regarding membership on non-Americans who are studying in American schools. When these students return to their native countries, they carry their memberships with them for life. Officially, there are no foreign alumni chapters, but small groups of international Tau Beta Pi members are known to meet informally.

In 1969 the Constitution was changed, allowing the Ritual to be translated into any foreign language. This followed the 1968 chartering of a Tau Beta Pi chapter in Puerto Rico. Although the first initiates were inducted in English, some did not fully understand the ceremony.

The Best and the Brightest

On December 21, 1968, a spaceship soared into the Florida sky from Cape Kennedy, destination—the moon. Among the few small trinkets Astronaut William A. Anders (*OH H '62*) was permitted to carry with him aboard that flight was a leather pouch containing his Tau Beta Pi key. *Apollo 8* carried the key around the moon 10 times, and when Anders returned to earth, he had the key engraved on its sloping posts with the words “Apollo 8” and his initials “W.A.A.” He encased it in a clear plastic disc marked with the name of the flight and the dates, and on October 9, 1969, he presented the key to Tau Beta Pi at the Convention in Houston, TX. President H.R. Chope (*OH Γ '48*) gave him a replacement key, and the original was put in a glass showcase in Tau Beta Pi Headquarters in Knoxville. This gesture represents the quality and pride to be found in Tau Beta Pi members.

Eligibility

Membership in Tau Beta Pi is based either on rank in one's engineering class or on one's professional accomplishments. The character of the proposed member is carefully considered. Not only must the member maintain high scholastic or professional standards, he or she must display such qualities as adaptability, civic interest, and ability to get along with others. The Eligibility Code was drawn up at the 1926 Convention as a reminder to chapters not to measure eligibility by degree of prominence. Being captain of the football team or editor of the school newspaper in itself does not necessarily prove the qualification of “good character.”



Prof. G.A. Goodenough,
MIA 1891

“It is assumed that a member of Tau Beta Pi possesses certain mental and moral qualities that make for success in life,” wrote Tau Beta Pi President G.A. Goodenough in 1906. “Some of these are earnestness of purpose, ability to think, capacity for hard work, courage, and confidence. In addition, he is assumed to be companionable—a man that can be lived with.”

Goodenough said members “are supposed to hand in the best reports, make the original and painstaking investigations, and submit the best theses. The Bent ... indicates that the wearer can think and work, that he has initiative and independence, that he can be trusted.”

The first members at Lehigh were selected from the top one-quarter of their senior class or the top one-eighth of their junior class. This standard held until 1941, when the scholastic requirements were changed at the urging of the Association of College Honor Societies. Thereafter, seniors had to rank in the top one-fifth of their class to be considered for membership. Tau Beta Pi, a founding mem-

ber of the A.C.H.S. in 1925, took part in the development and adoption of standards and definitions for honor-society chapter and membership eligibility, performance, responsibility, and terminology.

Screening

Prior to World War II, colleges were small and classmates were well-known to each other. In those days Tau Beta Pi members had no trouble evaluating the character of a potential member. They knew if he cheated on exams and whether he was active in campus or community projects. The flood of engineering schools after the war soon made character evaluation more difficult. To become more acquainted with potential members, chapters began holding “smokers” informal receptions for scholastically eligible engineering undergraduates. It was an old fraternity term, with an informal ring, a suggestion of fellowship. Such meetings today are known variously as get-acquainted parties, or just “meetings of the candidates.”

Initiation

Prior to 1906, the initiation ceremony was brief, a mere formality culminating weeks of pre-initiation activities. But by the turn of the century, the rites of pre-initiation had moved in directions Founder Williams had not anticipated. Horseplay and rough-housing were standard and, as Secretary Matthews related: “If you didn’t wind up in the hospital, they hadn’t done a good initiation job on you.”

A story comes down from Matthews concerning his own initiation, a mild one by standards of the day. He and his fellow electees were taken into the Illinois countryside on a horse-drawn wagon, their clothes were taken from them, they were given barrels to wear, and they were left to get themselves back into town. Matthews rebelled against this and the menial, subservient errands he was forced to undertake as a new electee. The activities, he said, were not befitting the image of an honor society.

It was this experience that prompted Matthews and a few others in 1906 to write the first initiation Ritual for Tau Beta Pi. Matthews’ ceremony was to be “mentally and morally stimulating, uplifting, and appealing to the higher virtues of man.” He made sure to add a restriction banning physically harmful rough-housing. With a few changes, the ceremony is used to this day. In 1914 it was shortened from 90 minutes to an hour, and some of the outdated language was revised. Since then, the Ritual has been shortened further and the language modernized. Many Conventions over the past 25 years have decided to maintain the traditional secrecy and privacy of this Ritual, not allowing even family or friends to witness it.

The ceremony didn’t preclude non-physical types of harassment and such activities persist in a few chapters. A favorite is to give grueling all-night examinations to electees, leading them to believe they must pass the test as a final hurdle to initiation. Secretary Nagel discouraged this, saying: “It has no meaning at all. Instead of requiring these all-night exams, let’s take these capable kids, who are apparently willing to do almost anything, and put them to work on something useful.”

So was born the booklet of some 400 “worthwhile activities” to guide chapters, not only during initiation rites, but throughout the year. These include such projects as tutoring freshmen, building playground equipment for a community day-care facility, providing guides for a local museum of science, organizing a Thanksgiving Day food drive, sponsoring forums on engineering topics, and more. The 1985 annual survey showed that chapters averaged nine activities a year, up from three a year in 1976.

A Life-long Relationship

A highlight of the 1932 Convention in Washington, DC, was a visit to George Washington’s Mount Vernon home in nearby Virginia, where on October 14, 1932, delegates gathered about 300 yards from the mansion to plant a nine-foot black oak tree. Irving Heikes, Tau Beta Pi’s first initiate, dug the first spade of earth. The tree flourishes today, symbolically representing Tau Beta Pi’s life-long relationship with its members, extending like the tree’s wide branches into following generations.

The Double-Bent Award recognition began in 1955 for new Tau Bates whose fathers were also members of the Association and whose mothers wore the Woman’s Badge. The Family department in THE BENT was created and has been expanded to include recognition for 38 sets of twins, 289 husband-wife teams, two mother-daughter families, one four-generation family, 47 three-generation families, and 69 families with three or more members of the same generation. There are too many father-son pairs to list.

Tau Beta Pi: A Family Tradition



Patricia L. Wall, MS 1983, (center) a computer-science major at the University of Mississippi, was congratulated upon her initiation in 1983 by members of her family—all Tau Bates! From L-R, they are: her sister, Elizabeth C. Wall, MS 1978; father, L. Damon Wall, MS 1954; grandfather, Russell Woodburn, KY 1929; sister Cynthia W. Rich, MS 1980, and brother-in-law, R. Neal Rich, MS 1981. The Woodburn-Wall-Rich family is listed in both our bi-spousal and multi-sibling categories and is one of Tau Beta Pi’s largest three-generation families.

Tau Beta Pi has developed a network of national programs over the years designed to help the student and the profession. One is the Fellowship Program, adopted by the 1928 Convention to provide for a year of graduate study to selected members at any college they choose. The only restriction is that the student recipient have a goal that will contribute to the engineering profession. Stipends, which began at \$750, have risen to \$5,000 in 1985. Four-hundred-eighty-one members have received \$1,190,000 in the 57-year history of the Fellowship Program.

The Student Loan Program was developed during the Depression in 1931 to assist undergraduate students in completing their studies. "An unprecedented economic disturbance has raised the gruesome spectre of economic poverty before so many who had never dreamed of it," wrote Tau Beta Pi President P.W. Ott (*IL A '17*) in 1931. "No member of Tau Beta Pi has had to cut short his education and join the ranks of the unemployed because of lack of funds." In 1950, the program was extended to graduate students. Since its inauguration, 1,373 students have borrowed \$439,000.

In 1950, the Association began to sponsor a national contest for chapter-winning essays by electees. For many years all electees were required to write papers, and chapters were encouraged to have their electees write on non-technical subjects in support of Founder Williams' stated goal of fostering "a spirit of liberal culture in engineering colleges." The contest expanded in 1955 to include two areas—one without limitation as to subject and the other on "Greater Interest in Government," a topic selected to encourage the electee to take an active role in civic affairs. Monetary prizes for the government-paper winners were paid from a fund started by interested alumni, including F.A. Faville (*IL B '19*). Judging of the essays was done twice a year, fall and spring, by committees of alumni, and the best papers were published in *THE BENT*.

The government essay contest was abandoned in 1981, along with the regular contest, when the Convention did away with the required essay. A new activity in the Greater Interest In Government Program was inaugurated—grants to chapters to help defray the costs of public-oriented projects. The Executive Council awards up to six grants annually for as much as \$750 each to fund such activities. Through July 1985, twelve grants have been given totaling \$6,540.

Another way to encourage and recognize superior chapter service projects is through the Outstanding Chapter



Frederick A. Faville, *IL B '19*, helped establish the Greater Interest in Government Program, which he perpetuated through gifts in 1969 and in 1984.

Award. Begun in 1956, it is Tau Beta Pi's highest annual honor bestowed on a local chapter. The chapter's name is added to a permanent bronze plaque in the central office, and a second bronze plaque is given to the winning chapter. Originally the Secretary-Treasurer appointed a committee of alumni as judges, but since 1972, a committee of student delegates at the Convention has selected the honoree and made the award. When Red Matthews died in 1978, at age 99, this prize was renamed the "R.C. Matthews Outstanding Chapter Award."

"The Most Improved Chapter Award" was established in 1971 to recognize outstanding improvement in chapter work. Students at the Convention select a winner based on activity and record keeping. In 1983 the award was renamed the "R.H. Nagel Most Improved Chapter Award."

In a continuing effort to foster the "spirit of liberal culture," the Laureate Program was begun as an experiment in 1981, and it was approved by the Convention in 1984. Up to five members who have excelled in non-technical areas may be recognized annually. They are nominated by their chapters for their excellence in one of four categories: arts, athletics, diverse achievements, and service. Winners are given \$2,500 cash awards, a plaque, and a trip to the Convention. Since 1981, nine Laureates have been recognized.

Merger: Elimination of Duplication

Where the idea first began for a coalition between Sigma Xi and Tau Beta Pi is not known, but it is believed to have originated with Sigma Xi in 1902. The idea probably came from someone who was a member of both organizations and who saw them competing at times for recognition of new chapters on the same campus. Where one organization already existed, the other would meet strong opposition from the established group if it tried to form on that campus.

A poll of the chapters of both organizations in 1902 revealed that most members were not enthusiastic about the merger. Nevertheless, the idea continued to be debated until 1906, when it was finally defeated. By this time a careful study of the two groups had revealed that they were very different in purpose. While Tau Beta Pi is an undergraduate society, Sigma Xi is mainly composed of faculty members and graduate students. Its purpose is the encouragement of original research in the fields of science. Tau Beta Pi recognizes high scholarship independent of the research qualification. Tau Beta Pi restricts membership to students in engineering, while Sigma Xi receives members in all branches of science.

When the union was rejected, President Goodenough wrote: "It is hoped that in the future the two societies, will have a clearer understanding of each other's aims and motives, and that there shall be no feeling whatever of competition or antagonism. Neither society alone can completely fulfill the functions of both. Any college is better for having both."

By 1927 talk of another union had emerged, this time with the engineering undergraduate society, Sigma Tau. Tau Beta Pi had just become one of the six founding members of the Association of College Honor Societies. The A.C.H.S. set out immediately to eliminate duplication of effort in the honor society field. Sigma Tau, founded in 1904 at the University of Nebraska, had 18 chapters and 3,600 members at the time; Tau Beta Pi had 53 chapters and 16,000 members. Eight colleges had both a Tau Beta Pi and a Sigma Tau chapter. The merger was proposed not to increase size, but to reduce confusion, duplication, and competition. The 1927 Tau Beta Pi Convention approved a resolution to work out a preliminary plan for merger, which was to be presented for approval at later Conventions of both organizations.

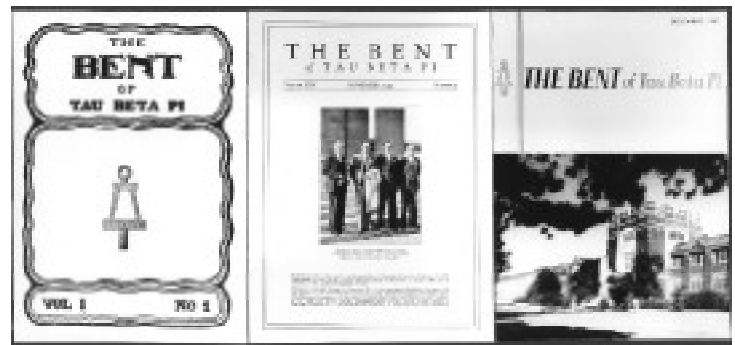
The aims, ideals and practices of the two societies were much alike. But they had some striking differences. Tau Beta Pi limited membership to the top one-quarter of the senior class. Sigma Tau dipped a little lower into the ranks to accept the upper one-third of the class. Sigma Tau had chapters at some schools that were too small, by Tau Beta Pi standards, to sustain an honor society. If there were to be a merger, however, Tau Beta Pi would have to accept all Sigma Tau members and all their chapters. The two organizations debated the issue sporadically for 47 years.

It was a Memphis, TN, airport hotel in 1973 that the final debate took place. George W. Forman (*IL A '41*), president of Sigma Tau, was instrumental in the discussions. Merger committees from both organizations arrived late in the afternoon, had dinner and retired to a conference room. For most of the night they drank coffee, smoked cigarettes, and waged battle. They went at it again starting with an early breakfast. Slowly, each point of disagreement was compromised and resolved. Tau Beta Pi, with 146 chapters, was arguing from a position of strength against Sigma Tau's 34 chapters and dwindling resources.

The final compromise was reached late in the day. Tau Beta Pi agreed to accept all Sigma Tau members and chapters. But Sigma Tau members wishing Tau Beta Pi membership would have to express that desire, and they would have to pay the initiation fee that would entitle them to a key, certificate, and magazine subscription. Tau Beta Pi's 1973 Convention approved the merger proposal, and it was ratified by the chapters two months later. Sigma Tau's chapters voted approval as well, and the merger was officially declared consummated on January 1, 1974. Sigma Tau's "mother chapter" at the University of Nebraska was converted to Tau Beta Pi's Nebraska Alpha Chapter on January 26, 1974, and the rest of the Sigma Tau chapters were converted or merged (where both societies co-existed on the campus) in ceremonies on their campuses later that season. National headquarters of Sigma Tau in Lincoln, NE, were closed June 30, 1974, and all records were transferred to Tau Beta Pi Headquarters. About 5,000 Sigma Tau students became members of Tau Beta Pi that first year, and over the years another 1,900 Sigma Tau alumni joined Tau Beta Pi.

Publications

In early 1906, four Pennsylvania Alpha undergraduates moved a battered old Olivetti into an office at Keystone Printing Company, 144 S. Main Street, Bethlehem, and began to put together the first issue of Tau Beta Pi's quarterly national magazine. According to *THE BENT*'s first Editor, Harry R. Lee (PA A '06), it was "an old-time printery not then invaded by linotype, but thoroughly pervaded by the odors of ink, paper, and tobacco."



THE BENT has changed over the years—Covers from Vol. I, No. 1; Vol. XXV, No. 4; and Vol. L, No. 4.

The magazine was welcomed by President Goodenough as "the beginning of a new era in the history of the Association, an era of greater strength, a wider influence, or more rapid progress. *THE BENT* will assist in binding the chapters more closely together."

The first issue was dated April 1906. The magazine passed through the hands of six editors before 1918, when World War I caused suspension of publications for four years because no editors were available. In 1929, the Life Subscription plan was inaugurated to expand the readership and help finance the Fellowship Program. Under this plan, members elect to pay a one-time fee (originally \$25, \$35 in 1963) for a subscription to *THE BENT* for as long as they live. During the subscribers' lifetimes, only the earnings of their invested fees are used to pay for the magazine. On their deaths, the full fees are transferred to the Fellowship Fund, where their continued investment yield is expended on graduate fellowship awards.

Today *THE BENT* is published quarterly by a small staff in the central office, with the Secretary-Treasurer serving as Editor. Circulation exceeds 95,000 paid subscribers, and 45,000 members have bought life subscriptions.

THE BULLETIN, renamed in 1984, is Tau Beta Pi's national chapter newsletter. It was first published in October, 1925, as the collegiate chapter edition of *THE BENT*, and was named *THE COUNCIL BULLETIN*. Since 1963, it has been published by the central office staff and sent to all undergraduate members, chapter advisors, and engineering deans. It contains instructions on election and initiation procedures, and it serves as a vehicle for the exchange of chapter project ideas.

Tau Beta Pi's Information Book is published annually and given to all new members. It contains current and historical data on chapters, membership, government, finances, publications, and national programs.

Tau Beta Pi's official song, "Tau Beta Pi to You," was first sung at the installation of Illinois Beta, at Armour Institute of Technology, Chicago, April 6, 1906. It was written by Edwin F. Gillette (*IL B '06*), who later served on the Executive Council from 1912 to 1916.

The first membership catalog was published in 1898 with the names of 427 members in five chapters. Along with THE BENT, it is credited with being one of the early developments that led to expansion of Tau Beta Pi. Five more issues were published, the last in 1939. Excessive cost and limited usefulness led to its abandonment. Present-day data processing of member records makes all the listings needed by national officers, chapters, and Headquarters readily available at low cost.

Finances

No organization—not even an honor society—can survive without money. And, if it wants to do more than merely survive, it needs even more money. Since Tau Beta Pi, from its beginnings, intended to do more than just "mark in a fitting manner" those who excel, it has looked for the bulk of its financial support from the most logical and proper source—its members. And it has received it.

The initiation fee charged each new member has always included the cost of the member's key and certificate,

a modest amount for maintaining a national office where problems are resolved and essential membership records are maintained, a charge for the costs of the annual Convention, and a local-chapter fee. In 1910 a subscription to THE BENT was added to the national fee. Except for small variations in the various components of the fee as the country's economy changed from time to time, the total national fee has remained remarkably consistent over the years. Its increase has been far below the rise in the general cost of living.

Since its founding in 1906, THE BENT has sought volunteer subscriptions from alumnus members. But not until inauguration of the life subscription plan in 1929—and only slowly for a few decades after that—have alumnus subscribers constituted a significant proportion of the total paid circulation of the magazine. In anticipation of the success of the plan and its ultimate support of the Fellowship Program, a few wise officials—L.T. Monson and A.D. Moore among them—set up trust arrangements for the prudent investment of life-subscription fees. With 45,000 enrolled life subscribers to date, the soundness of that financial scheme has long since been proved.

A unique feature of the life-subscription plan is its provision for use of only the fund's investment earnings during the lifetimes of the subscribers and the transfer of their full fees to the Fellowship Fund upon their deaths. Thus is the financial future of the Fellowship Program, Tau Beta Pi's major educational philanthropy, assured. Today, the Life Subscription Fund contains \$1,803,000 and the Fellowship Fund has \$376,000.

Two other sources of financial support for Tau Beta Pi have been developed over recent years—annual giving and bequests, both from members. From a small beginning, the Annual Giving Program has grown so that it now provides 40 percent of the society's total revenue, \$547,000 from 17,000 donors in 1984-85. The appeal for gifts is based on support for national-office operations to help keep charges to student members low—a sort of delayed initiation fee—and for Tau Beta Pi's programs in educational areas, including chapter and student-member development, fellowships, student loans, campus service, and outstanding-student recognition.

Six years ago, a single bequest of nearly half a million dollars permitted the establishment of the endowed Program Development Fund that today provides investment earnings and major support to the District Program. As Tau Beta Pi marks its Centennial, the total value of bequests is \$663,000, and the cumulative contributions have exceeded \$3,500,000.

All of the society's endowment funds, totaling \$3,129,000, are invested under the direction of a committee of three alumni who have extensive experience, proven judgment, and a deep interest in the financial well-being of a vigorous organization.

Tau Beta Pi's national operating budget is approaching \$1,400,000 a year, and its total assets are about \$3,547,000—a far cry from the days of financial struggle in the first half century of its existence.

Alumni Giving Program

The Annual Alumni Giving Program is managed by the Secretary-Treasurer. The assistance of a professional vendor has been used since 1974-75. The record of giving is as follows:

Year Ended	Total Gifts
7-31-66	\$13,891
7-31-67	16,000
7-31-68	19,801
7-31-69	19,453
7-31-70	43,828
7-31-71	50,410
7-31-72	32,204
7-31-73	40,761
7-31-74	44,484
7-31-75	79,534
7-31-76	159,806
7-31-77	182,780
7-31-78	260,502
7-31-79	247,693
7-31-80	273,934
7-31-81	295,269
7-31-82	356,947
7-31-83	405,286
7-31-84	469,091
7-31-85	547,984



Founder E. H. Williams Jr.



Prof. H. H. Higbie,
NY 1904

The Maturing of a Social Conscience

Life in some ways was simpler a century ago when Founder Williams conceived Tau Beta Pi. There was yet to be a World War, and space travel was science fiction. No one had heard of the transistor or silicon chip or radar or laser. Williams could only guess at the improvements that technology would produce, and one can only speculate whether he gave thought to their side effects. His vision for Tau Beta Pi was nonetheless a rare one. It would have been easy enough to create an organization that honored students with the highest grades. For Williams, that was only part of what made a good engineer. He wanted to broaden their viewpoints beyond the limits of their own technology. In addition to recognizing scholarly excellence, the emphasis was to be on exemplary character, on nurturing the development of “a whole person,” one who would influence society in philosophically, morally, and ethically positive ways. He wanted to prevent themselves from the social and political world that surrounded them. Tau Beta Pi will exist, he said, “to foster a spirit of liberal culture” among the brightest of our students.

World War I brought shrapnel and howitzers, and other previously unknown technological means of destruction. In general, as time passed, people seemed confident the human mind could undo what war had done. After all, a brain conceived the gun; surely the brain could triumph again in peace.

But while some Americans came home to battle for eight-hour workdays and child-labor laws, engineers went back to their laboratories and workshops to create the radio and television. Once again the world of the reformer seemed far removed from the world of the inventor. It would be a few years before the two would noticeably merge into one “whole person,” in Williams’ vision of a scholar with exemplary character, a crusader for social good, as well as a creator of social goods.

The 1930s were largely devoted to self-survival. Not losing sight of its objectives, Tau Beta Pi continued to nudge members toward a larger social conscience. In 1935, H.H.

Higbie (NY Δ ’04), former Tau Beta Pi President and professor at the University of Michigan, called for the organization to endow a foundation for the development of a service, not to business or industry, but to society. He wanted to see some engineering education and research being done independently of financial or business interests. “We seldom hear of any...engineering being devoted to the development of social service,” he wrote.

This Higbie report, as it came to be known, struck the first real blows, since Williams founded Tau Beta Pi, for the realization of a collective social conscience among engineers. It was to lie dormant but fertile during the frenzy of technological innovation that World War II invariably spawned, and during the affluent, self-indulgent years of the 1950s. The cudgel was taken up again in the 1960s and early 1970s by a generation of students struggling with the social turmoil of a society divided over a remote war in Viet Nam, shocked by the political corruption of Watergate at home, and frightened by the increasing evidence of environmental pollution and dwindling natural resources.

“The engineer, whose profession is the very creation and encouragement of technological advances, is intimately involved with many of the causes of society’s ills,” said Albert Bishop (NY Δ ’51) in 1969 as a member of Tau Beta Pi’s Executive Council. “He thus shares in the responsibility for constructive solutions and the avoidance of the problems in the future.”

As disenchanting minorities staged sit-ins on campuses, and the so-called “flower children” gave way to LSD and “free love,” Tau Bates were encouraged to help calm campus unrest by being a part of the social and political structure, by making their voices heard, by bringing their problem-forming and solving skills to the situation. They were advised not to withdraw from leadership positions, but to get actively involved.

It was in a speech to the 1971 Tau Beta Pi Convention that a student delegate brought things into focus.

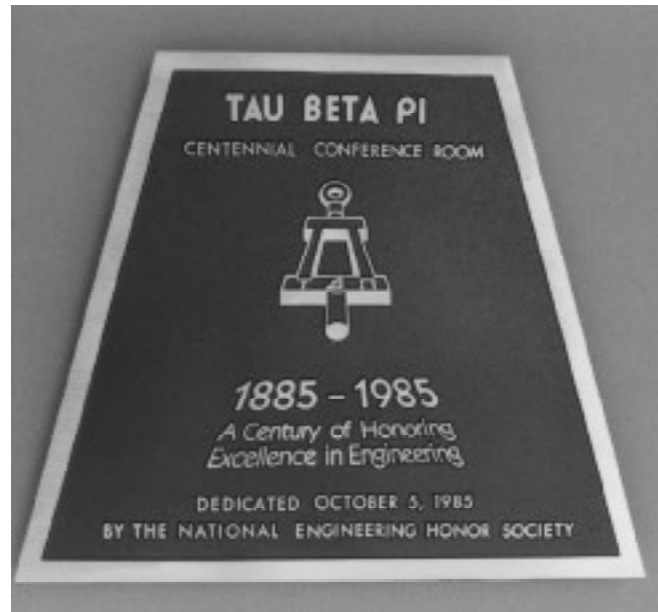
“We engineers have attempted to divorce our moral conscience from our technological brain. As inventors, we are credited with the extension of man’s life span, his independence of natural boundaries, and his existence in the most advanced environment in history. However, we are debited with the creation of new fears—the fear of poorly engineered products. No longer can we run and hide from our moral obligations.”

The 1970s saw an increasing number of engineers asking ethical questions specifically related to their work. Courses, conferences, and workshops in engineering ethics began to spring up on university campuses. Topics such as energy and environmental conservation, nuclear disarmament, and food shortages were discussed at conventions and in the classroom.

Tau Beta Pi’s leaders were in the forefront of the movement, just as they had been for 100 years. Only now the message had momentum. It had grass roots support from a society at last awakening to the notion that, if not checked by a social conscience, technology would take on an irrevocable life of its own, and from the looks of things, hurl the world toward destruction.

Tau Beta Pi's efforts, through its selection process and its emphasis on unselfish service with such programs as the Laureate awards, essay contests, and chapter awards, have attempted to implement Williams' charge to its members to have a sense of obligation to society. The future promises much for today's student: manned space flight and a new phase in human colonization of space; the beginnings of a real understanding of cancer; the potential for definitive earthquake and volcano prediction; enhanced exploration for minerals and energy sources; a continuation of the computer revolution; and emerging techniques for genetic engineering, to name a few areas. The best of that promise is that an increasing number of the brightest engineering students are entering the work force entrusted with the vital notion that the future is not theirs to inherit, it is theirs to create. They are responsible, not for reacting to the forces of an inevitable technology, but for designing, developing, producing, and protecting their environment.

The message of a hundred years is still prominent in all that Tau Beta Pi attempts to accomplish as an organization. Our people of excellence are among the leaders who will remake the world of tomorrow. Through an insistence on exemplary character in its members, an insistence that everyone work in a spirit of compassion and comprehension, Tau Beta Pi has had, and will continue to have an impact in creating a common resolve to work toward a better life. ❧



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