

Completing the Circuit:  
A Century of Electrical  
Education at MSM/UMR





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# Acknowledgments

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Jack B. Ridley  
Rolla, Missouri  
December 1, 1983

*To the alumni, faculty, staff, and students of electrical engineering at MSM/UMR, and especially to the first two department chairmen, Floyd H. Frame and Israel H. Lovett.*



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# Preface

This history records the highlights of the development of electrical engineering education on the Rolla campus, known first as the University of Missouri School of Mines and Metallurgy, and, now as the University of Missouri-Rolla.

There is a remarkable continuity of purpose and mission in electrical engineering education at UM-Rolla. The early leaders of the department developed a program that provided a strong emphasis on the basics of the science and practice of electrical engineering while offering an opportunity for specialization. This philosophy of a broad-based, in-depth, rigorous curriculum in electrical engineering exists today. The philosophy of quality undergraduate education is a hallmark of this department's program, past and present.

The department has met the challenges of the growth of electrical engineering, adding new areas of teaching and research as the discipline evolved.

Today the electrical engineering department at UM-Rolla is one of the largest in the United States. It has approximately 1,300 full- and part-time students. The department offers degree programs which include the bachelor of science, master of science, doctor of philosophy, and doctor of engineering. These programs are approved by the Accreditation Board for Engineering and Technology (formerly the Engineers' Council for Professional Development) and the North Central Association of Colleges and Secondary Schools.

Today electrical engineering at UM-Rolla can be characterized as a department with:

- High-quality undergraduate and graduate students devoted to the study and learning of electrical engineering;
- A prestigious faculty, devoted to excellence in teaching and quality in research and scholarly activities;
- An outstanding curriculum that provides depth and breadth in the science and practice of electrical engineering;
- Programs that provide study and research opportunities in all areas of electrical engineering, including circuits, communications, control systems, computer engineering, electronics, electromag-

netic fields and waves, electromechanical energy conversion, electro-optics, power systems, and solid state materials;

- Graduates that are sought by industry and governmental agencies throughout the nation.

Research and study in current and advanced areas of electrical engineering applications are directed by 35 faculty, most of whom hold the doctorate, and five teaching fellows who are Ph.D. candidates. This group is assisted by over 40 graduate assistants, supervised by a faculty associate, who teach in the department's laboratory program. In the past five years, 13 outstanding teaching and research faculty have been added to the department. Many of these new faculty have joined the department with significant experience in industrial research and development laboratories. External research funding and scholarly works of textbooks and professional journal publications by the faculty and students are at an all-time high.

Today the electrical engineering department continues to be recognized worldwide for its undergraduate program and is in the process of gaining recognition as a center of quality graduate and research programs.

Many efforts have been initiated to involve alumni and friends in the continued development of the department. These include an Industry Advisory Council for the power program and the Academy of Electrical Engineers. Industrial, foundation, and alumni giving to the department's development program has grown steadily and is now the largest in the department's history. Special scholarships have been established through endowments in the names of Thomas O. English, C. James Grimm, I. H. Lovett, F. H. Frame, and Robert H. Nau. An endowed equipment account has been established and funds given to this account will ensure that the department will continue to be well-equipped, and that an outstanding laboratory program will be maintained. Other endowments include an alumni graduate fellowship, and a recent fellowship, the Fred Finley Endowed Fellowship in Communication Theory, as well as a student loan program. Three professorships have been established—the Emerson Electric, the Schlumberger and the Teledyne MEC.

The electrical engineering department continues to follow the philosophy of a strong undergraduate curriculum established by our founding faculty and chairmen, Frame and Lovett. Roger Nolte led in the establishment of a doctoral program in the '60s, and Robert Betten brought to Rolla many faculty members with doctoral degrees in

preparation for the development of a research program. Today we are building on the work of these leaders.

Directions for the future of the department are well-established. They continue to be:

- A quality student body in electrical engineering;
- A rigorous, broad undergraduate program with ample opportunity for specialization;
- A quality teaching and research faculty that has depth and breadth in all areas of electrical engineering specialties;
- Growth in research and graduate programs supported by funding from industry and state and federal governments;
- A growing involvement of alumni, industry, and foundations in the support of teaching and research programs of the department.

The future of the department will be built on the strong base established in its history. The student will always be our first concern. The department is entering a new era of research and graduate program development. In this new era it will make many contributions to the electrical technological growth and needs of the nation in a way quite different from the past. The future of the department is bright. With the combined efforts of students, faculty, Dean Davis, Chancellor Marchello, alumni, and industrial friends, the electrical engineering department at UM-Rolla will continue to be one of the nation's leading programs in undergraduate education and will become one of the nation's major research departments.

J. Derald Morgan  
Department Chairman  
Emerson Electric Professor  
of Electrical Engineering



# CHAPTER I

## The Formative Years, 1871-1924

In 1871, the University of Missouri School of Mines and Metallurgy (MSM) was established at Rolla, a town on the crest of the Phelps County Ozark hills. During the same era, James C. Maxwell produced his famous treatise on electricity and magnetism, William Wallace produced the first American dynamo, and Alexander Graham Bell invented the telephone. In the same decade, the wizard of Menlo Park, Thomas Edison, worked his magic and developed an incandescent lamp system and formed, in 1877, the Edison Electric Light Company.<sup>1</sup> On the horizon, other pioneers, including George Westinghouse and Charles P. Steinmetz, demonstrated the potential uses of electrical power. As the electrical industry came into being, the profession of electrical engineering also began to take shape. In 1884, the founding of the American Institute of Electrical Engineers (AIEE) signaled the formal birth of the profession.

The Massachusetts Institute of Technology established the first electrical engineering program in America in 1882.<sup>2</sup> A degree in electrical engineering at MSM became available in 1915, but an interest in the technical applications of electricity existed virtually from the beginning of the school. Armand Ravold, a student at MSM from 1875 to 1877, remembered that C.P. Williams, the School's first director, demonstrated an electric arc lamp during Ravold's tenure as a student:

This is to certify, that in the fall of 1876, I saw Professor Williams, . . . demonstrate and explain an Electric Arc Lamp in the Chemical Laboratory of the School. Professor Williams and his assistant set up a battery of Electric Cells, some 20 or more in number, in the Chemical Laboratory of the School. An electric cell consisted of zinc and carbon elements immersed in a solution of sodium bichromate dissolved in diluted sulphuric acid. The cells were connected together and the current generated by them was allowed to flow through the carbons of the lamp, which produced a brilliant light at the point of contact of the two carbons. Whether the lamp was Hand-regulated or Self-regulated I do not remember, but I think that it was self-regulated by a shunt current. It was the

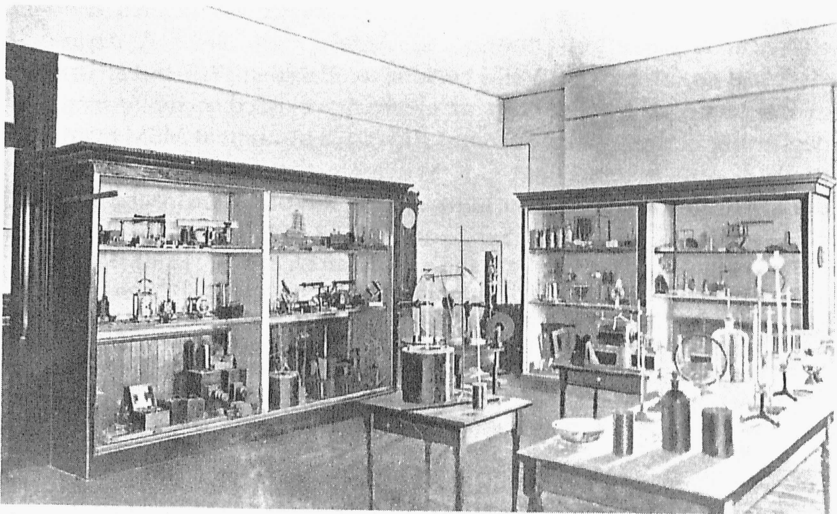
first electric light that I had ever seen, and needless to say, I was fascinated by it. In fact, it was the talk of the School for weeks afterward. . . .<sup>3</sup>

Prior to this experiment, the *Rolla Herald* reported Aug. 1, 1872, that Director Williams had returned from a trip to the East where he purchased “. . . a fine Holtz electrical machine [and] a Duboscq electric lamp with battery of 100 cells. . . .”

## A “Course” in Electricity

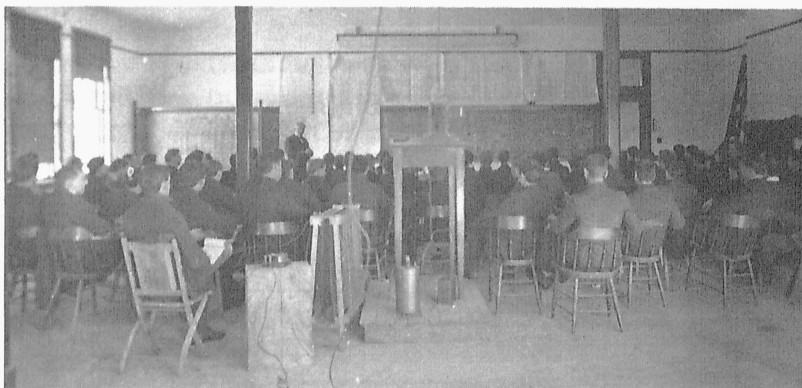
For those at MSM who wished to pursue the applications of electricity beyond Williams’ demonstration of an arc lamp, physics courses were offered in the 1880s, and late in that decade a B.S. degree in physics and mathematics became available to students. A B.S. degree in general science by the 1890s supplanted the old program.

In the last decade of the 19th century, a “course” in electricity became available to students. The 1894 MSM *Catalogue* explained the rationale for such a program: “For the benefit of those who may lack the time, the money, or the inclination to spend four years in preparation for professional work, certain special courses. . . are offered.”



Apparatus room, Physical Laboratory.

Included among these courses was a two-year program in electricity, designed to prepare students for “. . .management of light or power plants and application of electricity to mining operators. . . .”<sup>4</sup> The course, the narrative continued, sought to provide a good foundation for the profession of electrical engineering. This represented the first printed reference to the profession of electrical engineering at MSM. The course included classes in mathematics and physics as well as classes entitled “Special Electricity,” “Dynamo Electricity,” and “Applied Electricity.” These classes were open to students pursuing baccalaureate degrees in other disciplines as well as to special students who did not intend to earn a degree. The 1894 *Catalogue* also mentioned the availability of special classes in electricity and magnetism. Lectures



Classroom scene, circa 1904.

were to be based on Thompson’s *Lessons in Electricity* and Slingo and Brooke’s *Electrical Engineering*. Finally, a physical lab, which included the application of electrical measurements and care and management of dynamos and motors,<sup>5</sup> was available for three hours per week throughout the academic year.

The 1898 *Catalogue* indicated that offerings had been expanded to include “Electricity and Magnetism,” “Dynamo Electric Machinery,” and “Alternating Current Machinery.”<sup>6</sup> The 1901 *Catalogue* listed as additions to the program, “Electrical Transmission” and “Dynamo Design.” By the beginning of the 20th century, MSM offered a variety of courses in electrical engineering. During the 1906-07 school year, the course in electricity totaled 89 semester hours. The department of physics offered the electricity program and related electrical engineering courses at MSM as was typical on college campuses throughout the

United States at the time.<sup>7</sup> In spite of the program's lack of formal organization, students at MSM in the early years of the century exhibited considerable interest in electrical engineering as illustrated by the popularity of the electricity course and by an impressive list of senior theses dealing with electrical energy.<sup>8</sup>

## Expansion of the Electrical Engineering Curriculum

World War I, beginning for Europeans in 1914 and for Americans in 1917, created a great need for technical expertise, and electrical engineering was high on the priority list. Even though some University of Missouri officials disapproved of the expansion of engineering at Rolla beyond the parameters of mining and metallurgy and others advocated moving the school to Columbia, support for the development of degree programs in areas such as electrical engineering



CAMPUS VIEW

Campus scene, 1917.

increased in the early years of the 20th century. Before MSM could offer a degree in electrical engineering, however, an act of the legislature and a ruling by the state's highest court were necessary.

In 1915 the Missouri General Assembly passed the Buford Act, enabling MSM to offer ". . .the bachelor of science and professional



degrees in mining engineering, in metallurgy, in mechanical engineering, in electrical engineering, in chemical engineering, in civil engineering, and the degree of bachelor and master of science in general science."<sup>9</sup>

The University of Missouri Board of Curators voted 5-3 to ignore the Buford Act, the majority maintaining that it was the Curators' prerogative, rather than the legislature's, to establish University curriculum.<sup>10</sup>

MSM supporters took their case to the Supreme Court of Missouri. Harry Tobias Heimberger of Rolla, the student who would be the School's first degree recipient in electrical engineering, served as the plaintiff. The court found the Buford Act to be just and proper and ordered its implementation.<sup>11</sup> The court decision assured a future for electrical engineering at MSM although funding such programs continued to plague MSM officials for another generation.<sup>12</sup>

Passage of the Buford Act did not result in an immediate surge of enrollment in electrical engineering. In 1917, Heimberger became the first person to graduate from MSM with a B.S. in electrical engineering. No electrical engineers graduated between 1918 and 1920 although three students had listed electrical engineering as their major in 1918, and six students had chosen the discipline by 1920.<sup>13</sup> In 1921, three Miners earned degrees in electrical engineering and every year since



Harry Tobias Heimberger.

then, the graduating class has included electrical engineers. In 1924, the year of departmentalization, the first professional degree of electrical engineer was awarded to Israel H. Lovett. Professional degrees were available to those who had completed a thesis based upon a minimum of three years of professional experience.<sup>14</sup>

## The Faculty

The physics department served as the cradle of electrical engineering during these formative years. Prior to World War I, the task of developing and teaching the initial courses fell to the physicists and, in particular, to Austin Lee McRae. McRae held an Sc.D. in physics from Harvard. He joined the faculty at MSM in 1891, departed in 1894 and returned in 1899. In 1915, he became the institution's 10th director. When McRae departed in 1894, Arthur H. Timmerman succeeded him and served as head of the department until McRae returned. McRae



Austin Lee McRae.

continued as the lone faculty representative of physics and electrical engineering until 1914. During this time, he also developed the campus's first physical laboratory. Floyd H. Frame joined the depart-

ment in 1914 as an instructor in physics and electricity. Frame held an A.B. degree in electrical engineering from Clark University and the professional degree of electrical engineer from Worcester Polytechnic Institute.<sup>15</sup> In 1919, Leon E. Woodman, a physicist with a Ph.D. from Columbia University, succeeded McRae as department head. For a brief period during World War I, R.S. Wallis and Ralph E. Duffy assisted in teaching electrical engineering courses.

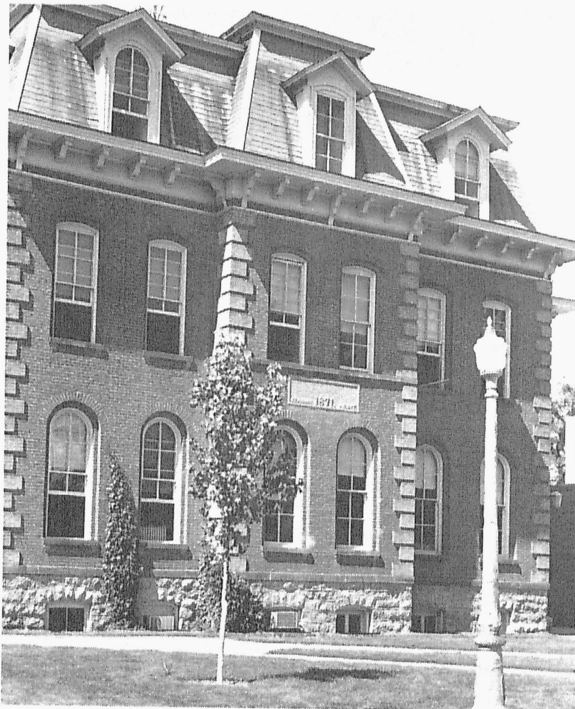


Floyd H. Frame.

George R. Dean, who held an academic appointment in mathematics, also could be added to the electrical engineering faculty of this period. His legendary exploits in calculus classes captivated over a generation of Miners. Dean's research interests belonged to electrical engineering as well as to mathematics. Over the years, Dean published in the *General Electric Review*, the *London Electrician*, and the *Transactions* of the American Institute of Electrical Engineers. The 1915-16 volume of the *Transactions* contains an article by Dean entitled "Calculation of Long Distance Transmission Lines for Electrical Engineering." Occasionally, Dean spent his summers at the General Electric Laboratory in Schenectady, N.Y., where the great Steinmetz presided. Dean's research at the G.E. Laboratory related to the sphere gap voltmeter and magnetic flux densities.<sup>16</sup>

In 1916, electrical engineering gained in status by virtue of the Buford Act. In the 1916-17 school year, the department of physics became the department of physics and electrical engineering. By 1923, the year before physics and electrical engineering became separate departments, the staff included Professor Woodman, Associate Professor Frame, Assistant Professor Ryland F. Ratliff (who held an M.S. in electrical engineering from Indiana University and joined the MSM faculty in 1920), and Israel H. Lovett, a graduate of MIT's electrical engineering program, who joined the staff in 1921. Joseph Worley, an MSM alumnus, served as an instructor during the 1923-24 school year.<sup>17</sup>

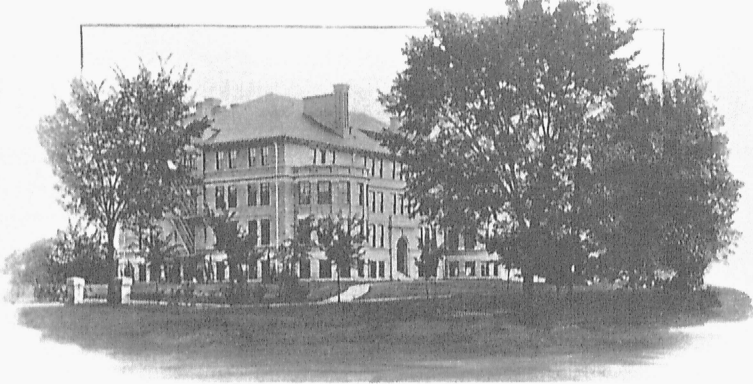
During these years, the department was fortunate to have men with impressive academic credentials such as McRae and Woodman, for professors with earned doctorates prior to the 1920s were rare. Dedicated men such as Frame and Lovett with solid academic backgrounds in electrical engineering laid the foundation for the discipline.



Rolla Building.

## Physical Facilities

Until completion of the Electrical Engineering Building in 1959, classes, labs, and offices were housed first in the Rolla Building and, after 1902, Norwood Hall. Even in the 1890s MSM personnel expressed pride in their physical laboratory which, as the MSM portion of the University of Missouri *Catalogue* for 1893-94 pointed out, was “. . .especially strong on the side of electricity and comprises two dynamos, with which a small electric lighting plant is maintained.”<sup>18</sup>



Norwood Hall.

By 1914 the physics laboratory in Norwood Hall could just as well have been called an electrical engineering lab for it contained a variety of generators, motors, rotary and stationary transformers, voltmeters, ammeters, fluxmeters, coils, and condensers.<sup>19</sup> In the early 1920s, with an electrical engineering degree program in hand, Professors Frame and Lovett expanded the laboratory in Norwood Hall's basement. The facilities on the eve of departmentalization are described in the 1923 *MSM Catalogue*:

The Department of Physics and Electrical Engineering is located in Norwood Hall. The lecture room is in the southeast corner of the building on the first floor. On the same floor are found the office and recitation room used by the department. All of the laboratories are located in the basement of the building. The Physical Laboratory is a large, well-lighted room, and is well equipped with water and gas and suitable tables for carrying on nearly one hundred experiments especially chosen for engineering students.

The department is well equipped with apparatus for carrying on the work as it is outlined for engineering students. As the

demand for courses in pure science increases, it is intended to increase the equipment so as to meet the needs and interests of these students.

## Curriculum

Prior to authorization of a degree program in electrical engineering, it would have been logical to expect few courses in electrical engineering, but the electricity course made available a variety of classes in the subject. Once a degree had been authorized, a full-fledged curriculum appeared for the first time in the *Catalogue* of the 1916-17 school year. According to Israel Lovett, MIT's program served as a model for the electrical engineering curriculum at MSM as it did for most schools in America.

The curricular description in the 1923 *MSM Catalogue* reads:

The curriculum in Electrical Engineering is intended to give a foundation in the general principles upon which the development of electrical engineering practice depends. Co-ordinated with this instruction in general principles are courses of a more professional nature. A close relationship exists between classroom and laboratory work. The latter consists of a study of methods of electrical measurements and tests of instruments and machines of the usual types found in practice. Two laboratories are equipped with modern apparatus for this work—the Electrical Machinery Laboratory and the Electrical Measurements Laboratory. In the Electrical Machinery Laboratory are two large test benches provided with transfer panels so that connections may be readily made with any machine which is to be tested. The Electrical Measurements Laboratory is equipped with high grade apparatus for making standard electrical measurements. Transfer panels in these laboratories make it possible to connect any kind of power available with any circuit in either laboratory.

Another laboratory is being equipped for work in radio communication.

The philosophy of the electrical engineering undergraduate program at MSM/UMR was established early. MSM's electrical engineering curriculum has adhered to the spirit of that early program. The intent from the beginning has been to provide the student with a broad foundation in the discipline while offering him or her ample experience in practical applications. The early day program and the curricula of the 1980s reflect the technological transformation of society. While the curricula prior to departmentalization emphasized electrical power

and anticipated the communications revolution, the curriculum of the 80s had been modified to accommodate the computer age.

## Students

Thousands of students over the years have elected to major in electrical engineering at MSM/UMR, but prior to 1924, the number was small. Before authorization of a degree in electrical engineering, it was impossible to distinguish between the student who preferred electrical engineering or one who leaned toward physics. In the absence of a separate electrical engineering department or degree, physics may justifiably claim the early graduates. Nevertheless, the classroom and work experiences of many of those graduates suggest that electrical engineering was their chosen vocation. Such students included Mervin J. Kelly, a 1914 graduate who pioneered in trans-Atlantic communications and served as president of the Bell Telephone Laboratories.<sup>20</sup> Kelly returned in 1936 to receive an honorary doctor of engineering degree. Albert G. Wishon, a student at MSM in 1875-76, was a pioneer in California's power and light industry. His son, A. Emory Wishon, earned a B.S. in general science at MSM in 1909 and followed in his father's footsteps in the California power and light utilities.<sup>21</sup> Zentaro Iijima took the electricity course in the 1895-96 school year and returned to Japan to become a noted electrical engineer and manufacturer.<sup>22</sup>

In the years between the founding of MSM in 1871 and 1924 when electrical engineering achieved departmental status, the young discipline hardly occupied center stage at the technological school in the Ozarks. In spite of somewhat modest origins, however, electrical engineering served as a part of MSM virtually from the beginning. It became apparent in the generation after 1924 that the discipline would play a significant role at the institution.

## Footnotes, Chapter I

- <sup>1</sup>Percy Dunsheath, *A History of Electrical Engineering* (New York: Pitman, 1962), p. 350 and Frederick E. Terman, "A Brief History of Electrical Engineering Education," *Proceedings of the IEEE* Vol. 64, (No. 9) September 1976, p. 1400.
- <sup>2</sup>J. E. Bedi, "The Centennial of Electrical Engineering at M.I.T." *Center for the History of Electrical Engineering*, Spring 1983, p. 3.
- <sup>3</sup>Phelps County Historical Society, *The History of Missouri School of Mines and Metallurgy* (Jefferson City: Mid-State Printing Co., 1941), p. 281.
- <sup>4</sup>Missouri School of Mines and Metallurgy *Catalogue*, 1894, pp. 35-36.
- <sup>5</sup>*Ibid.*, p. 56.
- <sup>6</sup>*MSM Catalogue*, 1898, p. 34.
- <sup>7</sup>Terman "Brief History of Electrical Engineering."
- <sup>8</sup>Phelps County Historical Society, *MSM History*, p. 560.
- <sup>9</sup>Lawrence O. Christensen and Jack B. Ridley, *UM-Rolla: A History of MSM/UMR* (Columbia: University of Missouri Printing Services, 1983), p. 69.
- <sup>10</sup>*Ibid.*, p. 71
- <sup>11</sup>*Ibid.*
- <sup>12</sup>See Chapter Two for a discussion of the separation issue.
- <sup>13</sup>Clarence N. Roberts, *History of the University of Missouri School of Mines and Metallurgy, 1871-1946* (Rolla, 1946), p. 75.
- <sup>14</sup>*Ibid.*, p. 61.
- <sup>15</sup>Phelps County Historical Society, *MSM History*, p. 653.
- <sup>16</sup>*Missouri Miner*, Sept. 22, 1937.
- <sup>17</sup>*Ibid.*, p. 915 and *MSM Catalogue*, 1923.
- <sup>18</sup>*MSM Catalogue*, 1893-94, pp. 113-114.
- <sup>19</sup>Phelps County Historical Society, *MSM History*, p. 609.
- <sup>20</sup>"Kelly and Radley Reflect on the First Trans-Atlantic Telephone Cable," James E. Brittain, ed., *Turning Points in American Electrical History* (New York: IEEE Press, 1976), p. 265.
- <sup>21</sup>Phelps County Historical Society, *MSM History*, pp. 28-29.
- <sup>22</sup>*Ibid.*, p. 682.



## CHAPTER II

# Years of Growth and Rationalization, 1924-1959

A separate department for electrical engineering at MSM became a reality in 1924. Departmentalization symbolized the administration's recognition that the youthful profession was beginning to play an important role in American society. For that matter, in the year of departmentalization the Missouri School of Mines and Metallurgy was relatively young by institutional standards. Between 1924 and 1959, the institution and the department of electrical engineering grew and matured. In 1959 as the department prepared to move into the new Electrical Engineering Building, MSM and electrical engineering approached a new era in higher education.

In spite of its youth, electrical engineering during the 1920s bore little resemblance to the foundling profession that appeared in the 1880s with the creation of the AIEE. In 1924, the World Power



Members of AIEE, 1930s.

Conference conducted its first meeting. Closer to home, a 50,000-kilowatt transmitter was installed in Chicago. Both the conference and the powerful transmitter reflected the tremendous growth and expansion of electricity since World War I. A communications revolution was helping to transform society as the telephone, the vacuum tube, and the radio became available to the masses. Such changes brought exciting new challenges in electrical engineering education to schools of technology across the nation, including MSM.

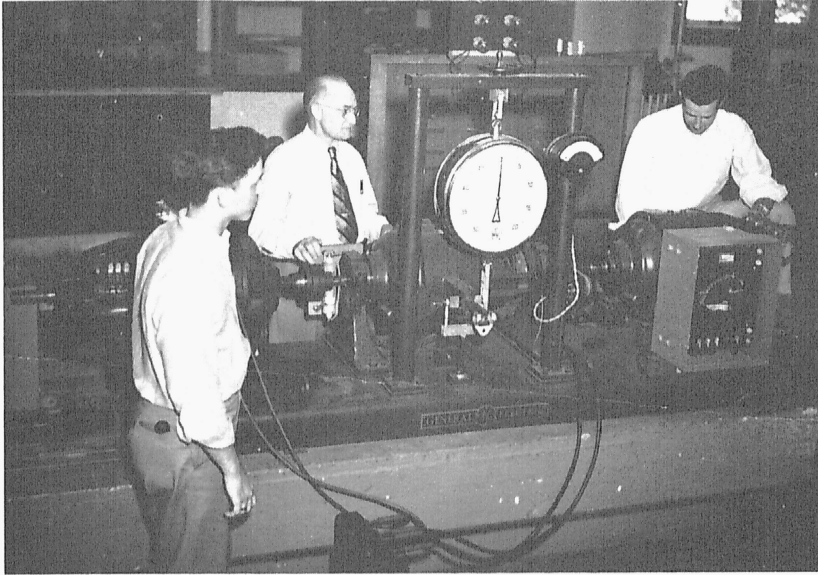
Between the world wars, MSM experienced some growth in enrollment but expansion was gradual and nothing like the explosion that would take place after World War II. In the fall of 1924, the students numbered 399 and by the fall of 1945, the student population had increased to 905. In 1924, 38 students declared electrical engineering as their major; in 1945, 126 students majored in electrical engineering.<sup>1</sup>

## Director Fulton's View of Electrical Engineering at MSM

Charles H. Fulton became director of MSM in 1920 and continued in that capacity until 1937. As a metallurgist, Fulton's educational priorities were in favor of mining and metallurgy. He viewed electrical engineering as ". . .in the one case. . .a special branch of metallurgy, and in the other. . .a great and important branch of power engineering."<sup>2</sup> However, Fulton did not prevent the expansion of courses in electrical engineering during his tenure as director.

## The New Department—Faculty

From 1924 until near the conclusion of World War II, the electrical engineering faculty changed little. Professors Frame and Lovett made up the faculty of the new department in 1924. Frame, who had just earned the professional degree of electrical engineer from Worcester Polytechnic Institute, became the department head. Lovett upgraded his credentials in 1924 when he earned MSM's first professional degree of electrical engineer and again in 1928 when he earned a master's degree from the University of Michigan. It also should be mentioned that Professor Woodman of the physics department assisted his colleagues by teaching a sophomore course, "Principles of Electrical



Professor Lovett in the power laboratory.

Engineering," and a junior course, "Principles of Alternating Currents."

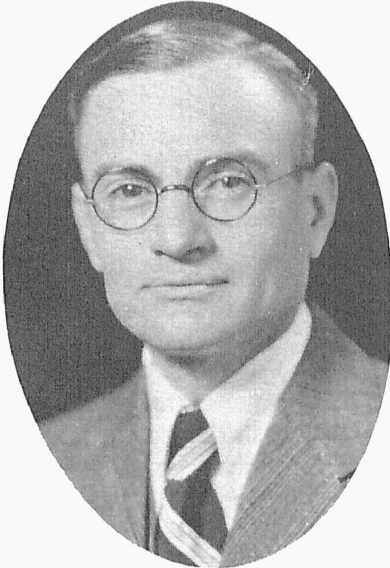
In 1925, George O. Raney joined the faculty. Raney held a B.S. in electrical engineering from the University of Oklahoma. In 1937, J. Stuart Johnson was appointed an instructor in electrical engineering. Johnson had earned a Ph.D. in electrical engineering from Iowa State University and was the first electrical engineer at MSM to possess such credentials. Frame, Lovett, Raney and Johnson made up the staff through 1943 until the necessities of war prompted some expansion of the faculty. Joseph Worley served as an instructor for one year in 1923-24 and Charles A. Van Doeren was instructor in 1927-28.

The typical electrical engineering professor of this era in American higher education had a bachelor's degree combined with some practical on-the-job experience.<sup>3</sup> By these standards, MSM's electrical engineering faculty possessed impressive academic credentials.

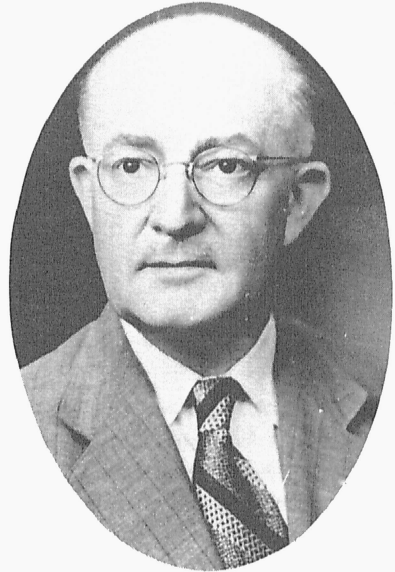
## The New Department—Students, 1924-1945

When the new department was created, 38 students had declared electrical engineering as their major. That number gradually increased

to 79 in the 1931-32 school year but dropped to 47 the next year as the Great Depression deepened and enrollment at MSM plummeted. Young Americans apparently recognized the need for electrical engineers on the horizon, however, and by 1939, the year World War II began in Europe, 105 of the 897 Miners were aspiring electrical engineers. Through the war years, the proportion of electrical engineering majors to the total student population remained approximately the same as in 1939.<sup>4</sup>



George O. Raney.



Israel H. Lovett.

The majority of electrical engineering students and, for that matter, the majority of students at MSM were Missourians. In the 1920s, 53 to 61 percent of the student body listed Missouri as their permanent residence. The Great Depression of the 1930s increased the percentage of native sons in the enrollment. In the 1934-35 school year, 79 percent of the student body hailed from Missouri. By 1937, 80 percent of the students were Missourians although 23 other states and a few foreign countries were represented.<sup>5</sup>

Because engineering was mostly a profession for males at this time, the majority of students were men. In 1927, the student newspaper, the *Missouri Miner*, listed 15 coeds in the student body of 505.<sup>6</sup> Of the handful of women who attended MSM during the period, electrical

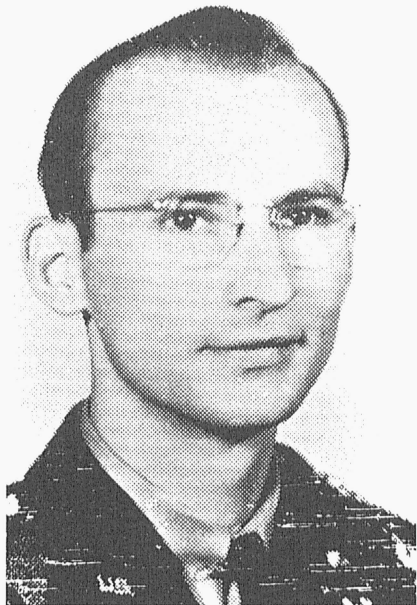
engineering could claim its share. The graduating class of 1944 included Jean McCaw Lloyd, daughter of long-time faculty member Sam Lloyd. Jean, the first female electrical engineering graduate of MSM, graduated 10th in a class of 77, but she only could be an



Jean McCaw Lloyd.

honorary member of Tau Beta Pi, for membership in the engineering honorary society was open only to men.<sup>7</sup> In 1945, Amy Goodhue West, daughter of mathematics professor E. A. Goodhue, became the second coed to complete the undergraduate curriculum in electrical engineering. Lloyd and West served as pioneers for their sister engineering counterparts in the second half of the century for they illustrated that women could successfully complete requirements for engineering degrees and could enter the work force.

Included among the students of this period were young men whose careers would become entwined with electrical engineering at MSM, C. James Grimm of the class of 1930 and Gabriel G. Skitek of the class of 1943. Grimm and Skitek returned to their alma mater after World War II and served a generation of electrical engineering students at MSM/UMR.



Gabriel G. Skitek.

## Student Organizations—1924-1945

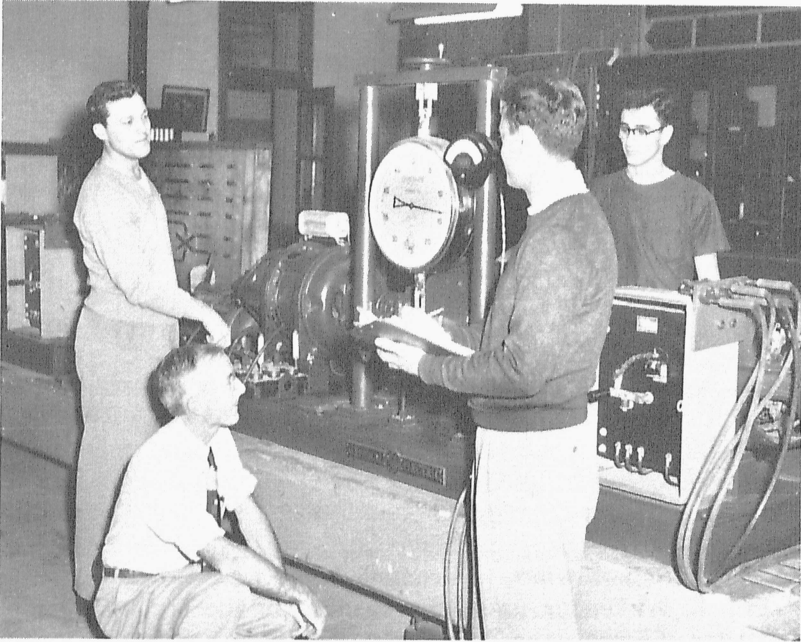
For more than a half century, electrical engineering faculty members at Rolla have encouraged student involvement in professional organizations. On Dec. 15, 1924, the *Missouri Miner* announced that a student chapter of the American Institute of Electrical Engineers (AIEE) would be established at MSM. The first formal meeting took place in 1925, and Israel Lovett served as the first faculty adviser.<sup>8</sup> General honor societies such as Tau Beta Pi (organized in 1906) and Phi Kappa Phi (organized in 1916) were open to outstanding electrical engineering majors as was Theta Tau, a professional engineering fraternity.<sup>9</sup> During the 1930s, a Radio Club was developed for those interested in communications.<sup>10</sup>

These organizations, particularly AIEE, served to encourage professional activities for undergraduates. In fact, the faculty expected students in electrical engineering with sophomore or higher standing to belong to the student branch of AIEE. Jim Grimm, for instance, became MSM's first contestant in the AIEE's District Seven Best Paper Contest. A student chapter of the Institute of Radio Engineers and the Theta Mu Chapter of Eta Kappa Nu, honor society for electrical

engineering students, would be established in 1948 and 1950, respectively.<sup>11</sup>

## Physical Facilities, 1924-1945

Throughout this period, Norwood Hall served as the home of electrical engineering as well as other academic disciplines. Electrical engineers found that, prior to departmentalization, Norwood Hall was a more-than-adequate facility given the minimal laboratory equipment that was required. As the years passed, however, the number of majors and classes as well as the amount of lab equipment increased



C. James Grimm with students testing the power output of an electric motor.

and space was a major problem until the completion of the Electrical Engineering Building in 1959. Actually, a building to house electrical engineering, mechanical engineering, and physics reached the planning stages in 1930, but the Great Depression and World War II interrupted those plans. A generation later each of the three disciplines could claim a building as its own.<sup>12</sup>

The laboratory space with which the staff made do until 1959 is described in the following excerpt from the March-April 1954 issue of the *MSM Alumnus*:

In 1921 the north machinery laboratory in the basement of Norwood Hall was rewired in conduit, test benches and a panel board were installed, thus, giving this room modern laboratory facilities. During 1922 the southwest machinery laboratory room was similarly equipped.

The two rooms described above. . . provided the space allotted for electrical machinery laboratories in the early 1920s. This same space in 1954 is still the only space allotted to electrical machinery laboratories. During the past thirty years there have been many revisions and alterations in power supply facilities, obsolete machines have been replaced by modern units and. . . many new units have been added but with no increase in available space.

By the late '30s, the faculty had benefited from a good relationship with industrial firms, resulting in the acquisition of valuable lab equipment from companies such as American Telephone and Telegraph, Emerson Electric, General Electric, Southwestern Bell, and Westinghouse.<sup>13</sup>

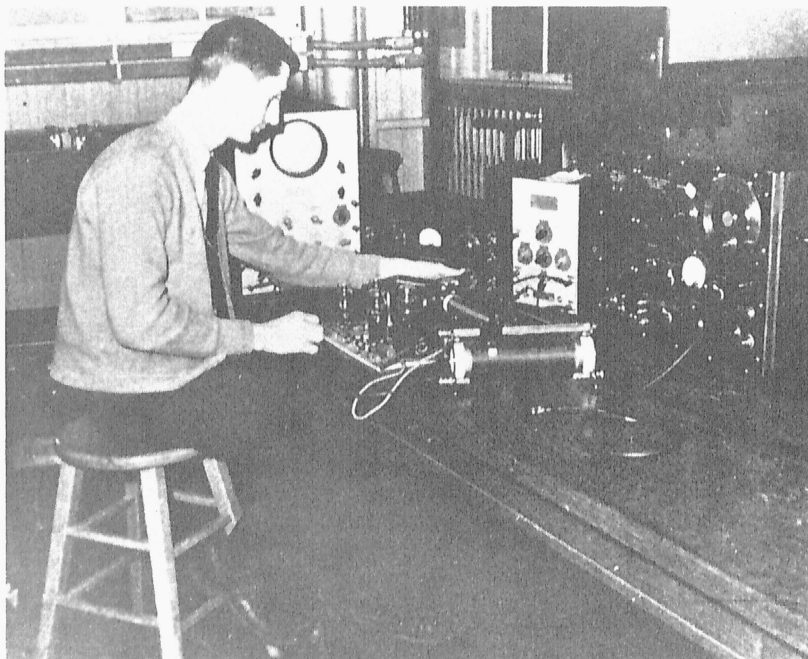
## Curriculum, 1924-1945

For engineering education in America, the interwar years represented a time for introspection and change. The technological requirements of World War I coupled with the features characteristic of a mature industrial society demanded that educators take stock of engineering curricula. The Mann Report of 1918, sponsored by the Carnegie Foundation, presented the first comprehensive study of engineering education. The Mann Report was followed by the Wickenden Report, which was compiled by a team led by educator William E. Wickenden under the auspices of the Society for the Promotion of Engineering Education. In addition to the presentation of statistical information regarding curricula, faculty academic qualifications, and the like, the Wickenden Report recommended the creation of an agency with the authority to accredit engineering curricula. In 1932, the Engineers' Council for Professional Development (ECPD) was created.<sup>14</sup> With the advent of ECPD, American engineering education in the 1930s moved toward more uniform curricula.



In general, these trends affected electrical engineering education especially technological breakthroughs in areas such as communication. Vacuum tube technology, for instance, became increasingly important and sufficiently complex to require some graduate work for those who wanted to remain truly competent in the field of communications.<sup>15</sup>

At MSM, curricular revision began prior to the 1930s. Director Fulton arrived on campus in 1920, and curricular reform began soon after. Curricula at MSM lacked uniformity at that time as degree



Oscilloscope laboratory.

programs varied from 185 to 197 credit hours.<sup>16</sup> On the eve of departmentalization of electrical engineering, a revised curriculum went into effect with the 1922-23 school year. Thereafter, each engineering curriculum required 172 hours for graduation, including 164 hours of specific requirements and eight hours of electives.<sup>17</sup> All engineering curricula shared a common first year.

The objectives of the electrical engineering curriculum are summarized in the following excerpt from the *MSM Bulletin* for 1925:

## Electrical Engineering

Professor Frame, Associate Professor Lovett.

The purpose of the curriculum in Electrical Engineering is to provide a thorough training in the fundamental principles upon which the development of electrical engineering practice depends. Rather than giving a specialized course in any branch of the profession opportunity is given to identify these fundamental principles in their numerous applications. Also the student is given opportunity to pursue studies of a humanistic type, and subjects devoted to the business aspects of engineering, thus making possible a broad education.

The electrical engineering work proper begins in the second semester of the sophomore year with an elementary course designed to acquaint the student with the various parts of electrical machines and circuits and with the various terms used in electrical engineering. In the junior and senior years more advanced courses are given in the principles of alternating currents, electrical machines, generation and distribution of energy, and the various applications of electricity. An important feature of these courses is the solution of numerous practical problems.

Particular attention is given to the proper correlation of laboratory work to class room study. Laboratory courses include a study of methods of electrical measurements and tests of practically all types of electrical instruments and machines used in practice.

The extensive equipment of the Electrical Engineering Laboratories makes possible an experimental study of the various types of electrical apparatus. Two laboratories are equipped with modern apparatus for this work—the Electrical Machinery Laboratory and the Electrical Measurements Laboratory. In the Electrical Machinery Laboratory are two large test benches provided with transfer panels so that removable connections may be readily made with any machine which is to be tested. Instruments and other auxiliary laboratory equipment are provided for this experimental study of electrical machines. The Electrical Measurements Laboratory is equipped with high grade apparatus for making standard electrical measurements of current, voltage, resistance, inductance, capacitance, magnetic properties of iron, and the calibration of instruments.

A student who has received the degree of Bachelor of Science in any engineering curriculum may also receive the degree of Bachelor of Science in Electrical Engineering upon the satisfactory completion, under the supervision of this department, of at least forty hours of work in excess of that required for the first degree, provided that the student already has credit for 1050, 1051, 1052, 1053, 1055, 1056, 1057 and 1058.

The Department of Electrical Engineering is located in Norwood Hall with the laboratories in the basement and the lecture rooms on the first floor.



Aerial view of the campus, 1925.

Electrical engineering courses included lectures and labs in "Elements of Electrical Engineering," "Electrical Machinery," "Electrical Measurements," "Principles of Electrical Engineering," and "Electrical Engineering Design." Additional courses included "Radio Communication," "Power Stations," and "Electric Railways." As the prospective graduate approached the senior year, three requirements represented the capstone of the undergraduate program. The faculty encouraged each student to gain on-the-job experience in an electrical engineering plant or industry during the summer break prior to the senior year. At the very least, they expected four weeks of "observation, note-taking and sketching at some electrical plant." During the final semester, each degree candidate wrote a senior thesis requiring original thought and investigation. The faculty also led the graduates on a senior trip to power stations, telephone companies, electrical manufacturing firms, and the like.<sup>18</sup>

In 1924, MSM officials revised the curricula again. All undergraduate degree programs were to consist of 158 semester hours. As in the

earlier revision, all engineering students shared a freshman-year curriculum which consisted of the following:

Freshman Year. All Curricula.

*First Semester.*—General Chemistry, 4-6; General Engineering Drawing, 0-9; Rhetoric and Composition, 3-0; Trigonometry and College Algebra, 5-0; Military Science and Tactics, 1-2; Physical Training, 0-1 (no credit); Special Lectures, 1-0 (no credit). *Second Semester.*—General Chemistry, 4-6; Descriptive Geometry, 0-9; Rhetoric and Composition, 3-0; Analytical Geometry, 5-0; Military Science and Tactics, 1-2; Physical Training, 0-2 (no credit); Special Lectures, 1-0 (no credit). *Summer School.*—Plane Surveying, 4. (Lect.-Lab.)<sup>19</sup>

The remainder of the electrical engineering program constituted "Curriculum VI" in the *Catalogue*:

Curriculum VI. Electrical Engineering.

*Second Year: First Semester.*—Mechanical Computations, 1-0; Machine Drawing, 0-3; English, 3-0; Calculus, 4-0; Physics, 4-6; Prin. Electrical Engineering, 3-0; Military Science & Tactics, 2-1. *Second Semester.*—English, 3-0; Calculus, 4-0; Machine Shop, 0-3; Physics, 4-6; Elementary Electrical Practice, 0-6; Fundamentals of Alternating Currents, 2-0; Military Science & Tactics, 2-1.

*Third Year: First Semester.*—Economics, 3-0; Theoretical Mechanics, 3-0; Mechanisms, 0-3; Metals in Engineering, 2-0; Electrical Machinery, 3-0; Electrical Measurements, 0-6; Alternating Currents, 3-0; Electives, 3-0. *Second Semester.*—Hydraulics & Water Power, 3-3; Economics, 3-0; Mechanics of Materials, 3-0; Physical Metallurgy, 0-3; Electrical Power Transmission, 3-0; Experimental Electrical Engineering, 0-6. *Summer:* Work in Practice.

*Fourth Year: First Semester.*—Power Plants, 3-3; Radio Communication, 3-0; Electric Power Stations, 3-0; Experimental Electrical Engineering, 0-6; Electric Railways, 3-0; Electrical Engineering Seminar, 1-0; Electives, 3-0. *Second Semester.*—Power Plants, 3-3; Telephone Communication Systems, 3-0; Electrical Engineering Design, 0-6; Radio Communication Lab, 0-3; Economics of Power System Design, 3-0; Electrical Engineering Applications, 3-0; Senior Trip; Non-Technical Electives, 2-0.

After these revisions, the MSM curricula in engineering changed little until the 1950s although some temporary changes were instituted during the 1940s to meet the demands of World War II. Consequently, for the next two decades the curriculum in electrical engineering essentially remained intact although there were course or laboratory revisions and additions. By the late '30s, for example, a 150-watt shortwave transmitter for telephone or telegraph transmission had

been added to the list of electrical engineering equipment. The station was located in a soundproof room in Jackling Gymnasium.<sup>21</sup> The 1938 *Catalogue* indicated that new courses had been added, including "Communication Engineering," "Electronics," and "Vacuum Tubes."<sup>22</sup>

## ECPD Accreditation

After 1936, ECPD accreditation became a benchmark of excellence in engineering education. Although the accreditation process was voluntary, a favorable report from an ECPD inspection team was beneficial. Rules and bases for ECPD accreditation included evaluation of the qualifications, achievements, and productivity of the faculty of the department being reviewed. The ECPD accrediting team also considered the quality of instruction in service departments, admissions requirements for students, overall student quality, and the achievements of graduates as well as the curricula, physical plant, and finances.

In 1936, an ECPD team visited MSM's campus and appraised all degree-granting engineering disciplines. The team found the electrical engineering curriculum and facilities adequate but advised school officials to employ an additional faculty member, preferably one with



J. Stuart Johnson.

an earned doctorate.<sup>23</sup> Dr. J. Stuart Johnson was subsequently employed, and in its report of Oct. 1, 1937, the ECPD approved MSM curricula in electrical as well as ceramic, civil, metallurgical, and mining engineering. Of the accredited disciplines, only civil and electrical engineering were outside mines and metallurgy and civil engineering's program had been on campus from the beginning. The electrical engineering staff deserved credit for acquiring accredited status for this new discipline. MSM's electrical engineering program was the first in ECPD Region V (Arkansas, Kansas, Louisiana, Missouri, Oklahoma, and part of Texas), to receive approval. ECPD, after reorganization, is now the Accreditation Board for Engineering and Technology (ABET).

## MSM During World War II

On Dec. 7, 1941, Japanese aircraft attacked America's naval base at Pearl Harbor, and the United States entered World War II. Probably more than in any other war, civilization looked to science and technology to provide solutions so critically needed to win the war. An unprecedented acceleration of technological accomplishment resulted. The electrical engineering profession would bear its share of the challenge.

At MSM, Fulton had resigned as director in 1937 and William R. Chedsey replaced him. Chedsey and some faculty members and townspeople became embroiled in a controversy over whether MSM should separate from the University of Missouri. In addition, insufficient funds and inadequate facilities and the like contributed to a general state of gloom. In August 1941, Chedsey stepped down. He was replaced by Curtis Laws Wilson, a metallurgist with a Ph.D. from Goettingen. Wilson, whose title was dean rather than director, would serve until 1963, longer than any of his predecessors. But the problems which plagued the campus had to be placed on hold in deference to the priorities of war. More than ever, the nation would need engineers.<sup>24</sup>

Regular registration increased through the 1942-43 school year and then declined. To illustrate, 112 students declared themselves to be electrical engineering majors in 1942-43. The following year, the number had plummeted to 68. In recognition of national needs, the faculty reduced graduation requirements to 144 hours. University officials also added a 12-week summer session which enabled students to complete their degree programs more rapidly.

Several special federal programs also were introduced to the campus including the Engineering, Science and Management War Training Program, a Signal Corps Program, and the Army Specialized Training Program. Hundreds of men participated in these programs. The electrical engineering faculty cooperated with all programs and supervised the Signal Corps Program. Beginning in September 1942, 56 men began a pre-radar course which included non-credit instruction in circuit theory, electronics, and radio communications. By the spring of 1943, 159 soldiers had received certificates verifying that they had completed the program.<sup>25</sup>

Before the war concluded, the electrical engineering faculty anticipated the post-war expansion of the electrical industry. In addition to serving candidates for degrees, the department instituted one- and two-year courses of technical training preparing veterans for positions as technicians in areas such as power, radio, television, and control.<sup>26</sup>

## Post World War II

An expansion of the electrical industry resulted from the war. Perhaps "explosion" would be a more appropriate term. The war had accelerated the development of things such as radar, microwaves, and electronic instrumentation. On the horizon, an avalanche of electronic technology awaited the electrical engineer. The new technology would include transistors, integrated circuits, computers, and calculators. In addition, television gradually joined the radio and then black-and-white television gave way to color television.

As the world war concluded, officials at MSM braced themselves for huge enrollment increases as almost seven million men were about to be released from the armed forces. Presumably, a good many of them would take advantage of the Servicemen's Readjustment Act of 1944 (the GI Bill of Rights) which would assist them as they pursued goals in higher education. The electrical engineering faculty remained the same in number as before the war. Stuart Johnson was on leave in 1944-46, (Johnson, in fact, would not return to Rolla until the 1960s) but Carl T.A. Johnk had joined the staff as an instructor. Johnk had a B.S. degree from Shurtleff College and a B.S. degree in electrical engineering from MSM.<sup>27</sup>

Enrollment increased from 905 the year before to a record 2,565 in the 1946-47 school year. Four hundred of these elected to major in electrical

engineering, making the department the largest on campus. If there were any doubts about the future of electrical engineering at MSM, they were washed away by the tide of new students.

## Overcoming Stepchild Status

As officials of MSM attempted to cope with the huge post-war student body, the issue of separation was raised again. Its resolution could be postponed no longer. Since the 1870s the most persistent and divisive issue facing supporters of MSM had been whether the campus would be better served as an integral part of the University of Missouri or separate from it. Over the years, various groups, including faculty, administrators, students, alumni, and townspeople debated the issue of whether engineering education at Rolla should be limited to mining and metallurgical engineering.

It required an act of the legislature, the Buford Act of 1915, and a state supreme court ruling before degrees in chemical, electrical, and mechanical engineering could be offered at MSM. In 1941, Director Chedsey resigned under duress, as he stated, because he had encouraged the growth of disciplines beyond the scope of mines and metallurgy.<sup>28</sup> Chedsey's successor, Curtis Laws Wilson, received a mandate from University President Frederick Middlebush to end the controversy, but America's entry into World War II took precedence over all other matters.

After the war, the separation issue intensified because of a clash between the administration and certain faculty members including Floyd H. Frame, head of the electrical engineering department. Frame and other separationists accused President Middlebush and other officials, including Dean Wilson, of "victimizing" the Rolla campus. The charges included allegations of discrimination against engineering programs at Rolla beyond the scope of mines and metallurgy. The separationists also charged University of Missouri officials with refusing to allocate a fair share of state funds for MSM.

The issue reached a peak in 1948 when the University of Missouri administration decided to discipline some of the more outspoken separationists on the faculty. Frame and four other tenured professors were to be transferred to the University at Columbia. In his 34th year at MSM, Frame was to be demoted to the rank of assistant professor of electrical engineering at the University of Missouri. One-third of his time was to be devoted to electrical engineering, two-thirds to the



University buildings department. Frame and his colleagues resigned rather than accept the transfer, but this action rendered separation an emotional issue that divided all those interested in MSM.

Mervin J. Kelly publicly supported the transfer and opposed separation. Another alumnus, W.O. Keeling, and Phelps County Representative Booker H. Rucker thought the administration had gone too far when it transferred the professors. In 1949, Rucker introduced House Bill 82 in the Missouri House of Representatives. The bill would make MSM's top administrator directly responsible to the Board of Curators thus bypassing the University administration in Columbia. The bill was defeated. It represented the final serious attempt to achieve separation.

After 1949, for a variety of reasons, University officials became more receptive to development at MSM, and in 1964, the creation of the University of Missouri at Rolla essentially laid the issue to rest.<sup>29</sup>

## Faculty—1946-1959

The expansion of the faculty was a distinct feature of the post-war years. While the number of faculty had remained constant between



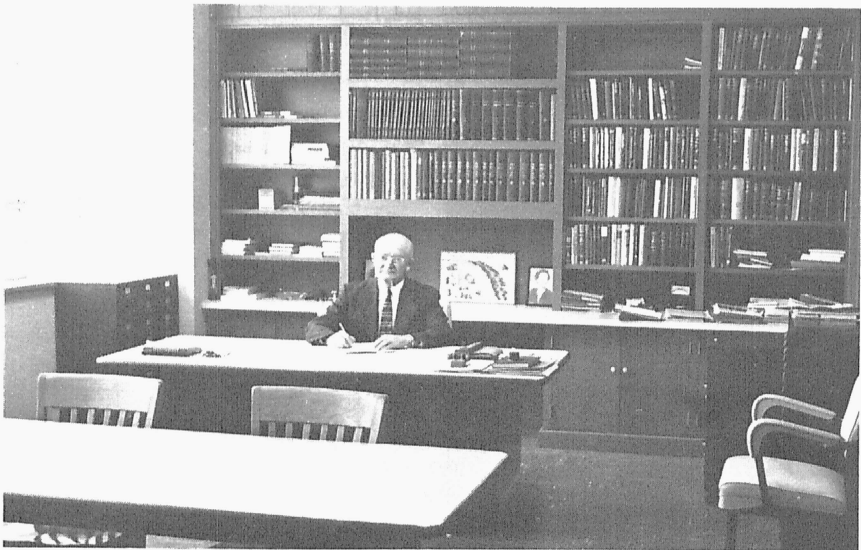
Israel H. Lovett.

the world wars, the vast number of majors in electrical engineering made additional faculty essential.

Between 1946 and 1949, the following new faculty arrived: Fred Beatty, William A. Ford, John Hammann, and Gabriel Skitek in 1946; William Feist, Paul Gray, John Cappeck, Robert Montgomery, and Joseph Rittenhouse in 1947; Richard Wheat, Arthur Grove, Horace Horton, Joseph Worley, John Zaborszky, Palmer Lee Anthony, Jr., John Barcroft, Herbert Crosby, William Murney, Jr., and C. James Grimm in 1948; and Edward Erdelyi, Walter Graham, Gerald Sinnamon, James Skiles, and Roger Nolte in 1949. Some, like Skitek, Grimm, Nolte, and Crosby, remained for many years and helped shape the future of electrical engineering at MSM.

Most of those, at the time of employment, had B.S. degrees in the discipline and on-the-job experience. Only John Zaborszky had a doctorate (a science doctorate from Hungarian Technical University). The increasingly complex electrical engineering profession dictated that virtually all of those who remained on the faculty return to graduate school for a master's degree or beyond.

In 1948, Israel Lovett succeeded Floyd Frame as department chairman. Lovett, who served as chairman until his retirement in 1960, presided over a much larger department than his predecessor. The



Israel H. Lovett in his office in the Electrical Engineering Building.

1949-50 bulletin shows that the faculty had increased in size to 16, four times larger than the departmental faculty of the 1930s. The size of the faculty decreased in 1950 as did student enrollment for most veterans had completed graduation requirements by that time. Following a slump in the early 1950s the faculty slowly expanded until the end of the decade when it totaled 19.

This post-war faculty, like their counterparts of the interwar years, emphasized teaching. In 1946-47, classes and labs ran from 7 a.m.-10 p.m. Mondays through Saturdays. C. James Grimm was always there to advise students. He was, as one student recalled, "the kind of guy who would pat you on the back or kick you in the pants depending on what you needed at the time."<sup>30</sup> Through the years, Grimm advised thousands of students and had the uncanny knack of remembering them years later. Students of that period also would remember Gabriel Skitek, "the human dynamo," who was always on the move attending committee meetings, teaching classes, or contacting a government agency or an industrial firm in search of laboratory equipment.

The faculty of this generation emphasized teaching but did not ignore research. Many faculty began to publish by the late 1940s and early 1950s. In the 1960s the department developed major research and graduate programs.

Sliderule-toting students of the mid-'50s might recall the grading practices of Professor Freeman T. Tingley. In particular, students might remember the stars, diamonds, and other coded marks that mystified students and kept them guessing about their fate in Tingley's classes until the end of the semester. Tom Herrick recalled waiting with fellow students outside Tingley's office to discuss his grade on an examination and overhearing a discussion that took place between the usually gruff professor and a student. On that occasion, Tingley was especially gracious and encouraged the student to argue for more points on the exam. The student and the eavesdropping Herrick became more incredulous when the professor continued adding points to each problem. At last the student completed his arguments and asked triumphantly, "Do you want to record my new grade?" "No," Tingley replied, "I have already recorded your grade. This was merely for your benefit." Needless to say, Herrick and friends did not stay to argue for points that day.<sup>31</sup>

The relationship between faculty and students in this period was formal, though cordial. Most students recalled spending pleasant evenings in the homes of their professors, and most students felt

comfortable approaching one or more of their professors for help in solving academic as well as personal problems.

## Students, 1946-1959

The large number of students was a distinguishing feature of MSM from 1946 to 1959. As mentioned previously, 2,565 students enrolled at MSM in 1946-47 and 515 declared electrical engineering as their major. Of the 1,262 freshmen that year, roughly 75 percent were veterans. These former GIs represented a new breed of student for they were older, more experienced, and more mature. Many had wives and children and they pursued their educational goals in a serious manner. These war veterans were on the Rolla campus to acquire an education so they could get on with the life plans that had been interrupted by war. Because they refused to participate in student activities so characteristic of the campus prior to World War II, dress codes, freshmen beanies, the freshman fight, and hazing disappeared thus concluding a chapter of student life at MSM.

Between 1946 and 1959, total enrollment varied from a low of 1,210 students in the 1951-52 year to a record high of 3,039 students in 1959. Electrical engineering claimed a substantial number of students. Electrical engineering majors increased and declined with the ebb and flow of general enrollment. Electrical engineering experienced a peak in 1950 when 123 earned the B.S. degree in electrical engineering.<sup>32</sup> In the following year, placement officials proudly announced that starting salaries of MSM graduates in 1951-52 averaged \$334 per month.<sup>33</sup>

By the early 1950s, enrollment declined as veterans of World War II completed their degrees, but Korean War veterans soon replaced them. Enrollment gradually increased through 1959 when the department could claim 632 majors.

As before the war, the great majority of students at MSM came from Missouri but more states were represented. For example, during the 1949-50 school year, the *Missouri Miner* recounted that 1,450 students listed Missouri as their state residence, 368 listed Illinois, 171 listed New York, and 78 listed Wisconsin. The student population that year included 50 international students with India, China, and Turkey having the largest representation.

Another distinguishing feature of this era is the increased number of graduate students. Research and development, with federal grant

support, became a more important feature of higher education. The most dramatic increases in research efforts and graduate education in electrical engineering at Rolla came after 1964, as will be discussed later. Although MSM remained essentially an undergraduate institution which emphasized teaching, the graduate program expanded. In 1946, campus-wide enrollment included 86 graduate students. In 1950-51, graduate enrollment peaked at 187. It dropped to 68 in 1953-54 but increased to 143 by 1959.

Prior to 1946, students could earn graduate credit in electrical engineering at Rolla, but graduate degrees had to be granted through the Graduate School at the University of Missouri at Columbia. In 1946, MSM initiated a master's degree program and H.L. Seneff earned the first M.S. degree in electrical engineering in 1947.<sup>34</sup> For the remainder of the period, the graduate program remained small and work was restricted to the master's level.

## Student Organizations

After 1948, the student branch of AIEE had to share the limelight with the Institute of Radio Engineers (IRE). The joint student branch of the AIEE and IRE was among the first of its kind. The Radio Club remained active, and the Theta Mu chapter was established in 1950 and received recognition by the electrical engineering honorary society, Eta Kappa Nu, in 1951. Theta Mu's duties included preparation and distribution of a departmental newsletter for alumni, selection of the outstanding senior electrical engineering student each year, and provision of cash awards for the best AIEE-IRE student paper. During its first decade of existence, Theta Mu consistently ranked among the top chapters of Eta Kappa Nu in the nation in activities, membership records, and paper contests.<sup>35</sup>

## Curriculum, 1946-1959

From 1946 through 1952, the curriculum remained essentially the same as before World War II although new courses with accompanying labs included "Communications Networks" and "Ultra-High Frequency." Students enjoyed considerable latitude during their final years; seniors selected 15 credit hours in elective subjects. As the requirements in electrical engineering broadened during the 1950s, the

number of electives diminished to a minimum of six credit hours.<sup>36</sup>

The 1952-53 school bulletin reflected the first major curricular revision in many years, as requirements for graduation changed from 150 credit hours to 148. The difference was a reduction in credit hours for chemistry during the freshman year.<sup>37</sup> By the late '50s, the "work-in-practice" summer requirement prior to the senior year and the senior trip had been eliminated from Curriculum VI. Moreover, the 148 hours for graduation no longer included credit for freshman-sophomore military science or freshman physical education.

In the 1958-59 school year, the department anticipated its move into a new building and into a new era. It is interesting to examine Curriculum VI:

Curriculum VI, Electrical Engineering

Number	Name of Course	Hours Per Lect.	Week Lab.	Credit Hours
Freshman Year				
<i>First Semester:</i>				
Chem. 1 and 2	General Chemistry .....	4	3	5
Draw. 11	General Engineering Drawing I....	0	6	2
Engl. 1	Rhetoric and Composition.....	3	0	3
Math. 5	Algebra and Trigonometry .....	5	0	5
C.E. 1	*Elementary Plane Surveying .....	1	3	2
M. 10	Military Fundamentals .....	2	1	2
P.E. 1	Physical Education .....	...	...	0
		15	13	19
<i>Second Semester:</i>				
Chem. 3	General Chemistry .....	3	0	3
Draw. 12	Descriptive Geometry.....	0	6	2
Engl. 2	Rhetoric and Composition.....	3	0	3
Math. 8	Analytic Geometry and Calculus II.....	5	0	5
Hist. 160	American Civilization.....	3	0	3
M. 20	Military Fundamentals .....	2	1	2
		16	7	18
Sophomore Year				
<i>First Semester:</i>				
E.E. 51	Principles of Electrical Engineering.....	3	0	3
Engl.	See footnote** .....	3	0	3

Math. 21	Analytic Geometry and Calculus II .....	4	0	4
Phy. 21	General Physics Lectures.....	4	0	4
Phy. 32	General Physics Laboratory .....	0	3	1
M. 30	Military Fundamentals .....	2	1	2
Econ. 100	Principles of Economics .....	<u>3</u>	<u>0</u>	<u>3</u>
		19	4	20

*Second Semester:*

E.E. 53	Principles of Electrical Engineering.....	3	0	3
Engl.	See footnote** .....	3	0	3
Math. 22	Analytic Geometry and Calculus III .....	4	0	4
Mech. 51	Engineering Mechanics— Statics.....	3	0	3
Phy. 25	General Physics Lectures.....	4	0	4
Phy. 36	General Physics Laboratory .....	0	3	1
M. 40	Military Fundamentals .....	<u>2</u>	<u>1</u>	<u>2</u>
		19	4	20

\*Students presenting credit in Trigonometry will schedule Elementary Plane Surveying in the first semester. Those without credit in Trigonometry will schedule Elementary Plane Surveying in the second semester.

\*\*Requirements fulfilled by successful completion of any one of courses Engl. 51, 75, 100, 102, 110, 125, 170, provided at least one three credit hour course in literature is included.

Curriculum VI, Electrical Engineering

Number	Name of Course	Hours per Week		Credit Hours
		Lect.	Lab.	
Junior Year				
<i>First Semester:</i>				
E.E. 131	Electrical Machinery .....	3	0	3
E.E. 141	Principles of Alternating Currents.....	3	3	4
E.E. 142	Electrical Engineering Measurements .....	0	6	2
E.E. 261	Principles of Electronics.....	3	0	3
E.E. 262	Electronics Laboratory .....	0	6	2
Math. 201	Differential Equations.....	3	0	3
Mech. 103	Mechanics of Materials.....	<u>3</u>	<u>0</u>	<u>3</u>
		15	15	20

<i>Second Semester:</i>				
E.E. 132	Experimental Electrical Engineering.....	0	6	2
E.E. 133	Electrical Machinery .....	3	0	3
E.E. 251	Electric Transmission .....	3	0	3
E.E. 275	Electric and Magnetic Fields.....	3	0	3
E.E. 277	Electronic Circuits .....	3	0	3
E.E. 278	Electronic Circuits Laboratory .....	0	6	2
Mech. 104	Materials Testing .....	0	3	1
Met. 113	Metals and Alloys in Engineering.....	<u>2</u>	<u>0</u>	<u>2</u>
		14	15	19

<i>Senior Year</i>				
<i>First Semester:</i>				
Econ. 201	*Engineering Economics .....	3	0	3
E.E. 134	Experimental Electrical Engineering.....	0	6	2
E.E. 135	Electrical Machinery .....	3	0	3
E.E. 195	Electrical Engineering Seminar.....	1	0	1
E.E. 241	Electrical Transients .....	3	0	3
Mech. 102	Engineering Mechanics—Dynamics.....	2	0	2
	**Electives .....	<u>6</u>	<u>0</u>	<u>6</u>
		18	6	20
<i>Second Semester:</i>				
E.E. 263	Network Analysis .....	3	0	3
C.E. 131	Elementary Fluid Mechanics.....	3	0	3
M.E. 120	Power Plants Laboratory .....	0	3	1
M.E. 121	Thermodynamics.....	3	0	3
Phy. 251	Atomic and Nuclear Physics.....	3	0	3
	**Electives .....	<u>7</u>	<u>0</u>	<u>7</u>
		19	3	20

\*Econ. 314 or Econ. 356 may be taken in place of Econ. 201.

\*\*Electives for both the first and second semester senior year are to be chosen in conference with the department chairman and are subject to his approval. Six credit hours of electives must be chosen from E.E. electives.

## Physical Facilities, 1946-59

Electrical engineering kept its old quarters, Norwood Hall, from 1946 to 1959. Record enrollments caused a serious shortage of space for classrooms, labs, and offices, particularly from 1946 to 1950, and electrical engineering spilled out of its headquarters in Norwood





Electrical Engineering Building.

Hall to occupy three temporary buildings and two rooms in the Old Metallurgy Building. By 1954, the department had sufficient equipment for an industrial electronics laboratory, but there was no space for it. A classroom doubled as a radiation lab. All of the equipment in the radio lab made it difficult to walk about, and the electrical machinery lab bulged at the seams with equipment.<sup>39</sup>

Electrical engineering at MSM required new physical facilities, and the University of Missouri Board of Curators recognized the need. The problem related to funding. As to physical facilities, on the eve of completion of the new building, the following description for the 1958-59 school year provides a nice summary:

Electrical Engineering: The laboratories of the Electrical Engineering Department are located on the ground floor and on the first floor of Norwood Hall. Their power requirements are supplied by 220-volt, 110-volt, and 32-volt, d-c generators of approximately 125 kw combined capacity, 10 portable lead-acid and nickel-iron-alkali batteries providing voltages from 1.2 volts to 6.0 volts, and a 3-phase transformer bank of 45 kva capacity making 3-phase and single-phase a-c power available at 220 and 110 volts. The electronics and communication laboratories are

equipped with a variety of vacuum-tube regulated d-c power supply units as well as numerous types of constant voltage transformers with which to augment the main power supply.

The electrical machinery laboratories contain standard types of a-c and d-c rotating machinery, ranging from a fraction of a horse power to 35 horse power. The d-c machines are of the shunt, series, and compound type. The a-c machines are represented by single and polyphase alternators and motors. The polyphase a-c motor group includes various types of squirrel cage and wound rotor induction motors, and commutator motors representing the adjustable speed type. A wide variety of single-phase power transformers is also provided in this laboratory.

Prony brakes and electrical dynamometers, both a-c and d-c, are available for loading purposes together with resistance loads of the water barrel, carbon, and resistance wire type.

Measuring instruments of high accuracy are available in sufficient quantity and of proper range to insure obtaining the maximum amount of information from each laboratory experiment. The types of instruments available represent, insofar as possible, the types found in industry.

For advanced work in power and machinery, various special types of equipment are available, such as amplidynes, thymotrol control systems, mototrol system, d-c calculating board, and magnetic oscillograph.

The electronics and communications laboratories contain adequate high quality audio oscillators, radio frequency oscillators, vacuum tube voltmeters, cathode-ray oscillographs, square wave generators, electronic switches, frequency meters, Tektronic oscillograph, Q-meter, d-c amplifiers, radio frequency bridges, R-L-C bridges, television receivers, F.M. receivers, ohmmeters, optical pyrometers, dielectric heating equipment, precision condensers, precision inductors, artificial transmission lines, and the usual D'Arsonval, and thermo-couple types of meters.

An analog computer with capacity to seventh order differential equations is used in demonstrations of principles and circuits involved in computer work. Graduate students are allowed the use of the computer.

The ultra-high frequency laboratory contains a wide variety of equipment such as U.H.F. oscillators, antennas, coaxial wave meters, cavity frequency meters, slotted lines, horns, parabolas, wave guides, wave guide attenuators, wave guide crystal mounts, wave guide slotted sections, wave guide tuners, bolometer bridges, klystrons, magnetrons, and an adequate supply of coaxial cable and wave guide fittings.

The measurement laboratory test equipment consists of potentiometers for voltage and current measurements, R-L-C bridges, audio oscillators, ohmmeters, Micromax and Esterline Angus

recording meters, standard cells, decade condensers, decade resistors, variable inductors, watt meters, watt-hour meters, dynamometer instruments, iron vane instruments, thermo-couple instruments, and D'Arsonval instruments.

Plans are being prepared for a new Electrical Engineering laboratories building which will provide improved housing for the excellent equipment of the department. Funds for this building are to be provided by the seventy-five million dollar bond issue approved by the people of Missouri in 1956. It is expected that construction will start early in 1958.<sup>40</sup>

In 1956 passage of a \$75 million bond issue included \$4.9 million in requests from the Rolla campus. With public approval, officials allocated \$1 million of this amount for the construction of an Electrical Engineering Building. The completion of this building by the 1959 fall semester inaugurated a new era in electrical engineering at the University of Missouri School of Mines and Metallurgy. The dream that began with building plans in 1930 was at last fulfilled.

## Footnotes, Chapter II

- <sup>1</sup>Roberts, *1871-1946 MSM History*, pp. 100, 118.
- <sup>2</sup>Phelps County Historical Society, *MSM History*, p. 878.
- <sup>3</sup>Terman, "Brief History of EE," p. 1404.
- <sup>4</sup>Roberts, *1871-1946 MSM History*, pp. 100, 118.
- <sup>5</sup>*Missouri Miner*, March 31, 1937.
- <sup>6</sup>Christensen and Ridley, *UM-Rolla* pp. 104-5.
- <sup>7</sup>*MSM Alumnus*, Spring 1944.
- <sup>8</sup>*Missouri Miner*, Feb. 23, 1925; Phelps County Historical Society, *MSM History*, p. 955; and Roberts, *1871-1946 MSM History*, p. 96.
- <sup>9</sup>Phelps County Historical Society, *MSM History*, p. 960.
- <sup>10</sup>*MSM Catalogue*, 1938-39, p. 117.
- <sup>11</sup>I.H. Lovett, *MSM Alumnus*, October 1951, p. 12.
- <sup>12</sup>*Missouri Miner*, Jan. 7, 1930.
- <sup>13</sup>*MSM Catalogue*, 1938-39, p. 117.
- <sup>14</sup>Lawrence P. Grayson, "A Brief History of Engineering Education in the United States" *Engineering Education* (December 1977), pp. 257-58.
- <sup>15</sup>Terman, "Brief History of EE," p. 1403.
- <sup>16</sup>Phelps County Historical Society, *MSM History*, p. 891.
- <sup>17</sup>*Ibid.*
- <sup>18</sup>*MSM Bulletin*, 1925.
- <sup>19</sup>Phelps County Historical Society, *MSM History*, p. 896.
- <sup>20</sup>*Ibid.*, p. 899.
- <sup>21</sup>*MSM Catalogue*, 1938-39, pp. 116-117.
- <sup>22</sup>*Ibid.*, pp. 40-41.
- <sup>23</sup>Phelps County Historical Society, *MSM History*, pp. 855-59 and J. Stuart Johnson Oral Interview.
- <sup>24</sup>Christensen and Ridley, *UM-Rolla*, pp. 111-12.
- <sup>25</sup>*Ibid.*, p. 115; Roberts, *1871-1946 MSM History*, pp. 106, 118.
- <sup>26</sup>See University of Missouri School of Mines and Metallurgy Bulletin "1 and 2 year Courses of Technical Training at College Level for Veterans," pp. 22-23.
- <sup>27</sup>*MSM Alumnus* October-November 1945, p. 5; Roberts, *1871-1946 MSM History*, p. 108.
- <sup>28</sup>*Missouri Miner*, April 1, 1941.
- <sup>29</sup>Christensen and Ridley, *UM-Rolla*, pp. 135-44.
- <sup>30</sup>*MSM Alumnus*, December 1973, p. 7.
- <sup>31</sup>Thomas Herrick Oral Interview, May 8, 1983.
- <sup>32</sup>*MSM Alumnus*, January-February 1954, p. 6.
- <sup>33</sup>*MSM Alumnus*, September-October 1952, p. 10.
- <sup>34</sup>*MSM Alumnus*, September-October 1951, p. 12.
- <sup>35</sup>*Ibid.*, p. 12 and June 1962, p. 16.
- <sup>36</sup>*Ibid.*
- <sup>37</sup>*MSM Bulletin*, 1952-53.
- <sup>38</sup>*MSM Bulletin*, 1958-59.
- <sup>39</sup>*MSM Alumnus*, January-February 1954, p. 7.
- <sup>40</sup>*MSM Bulletin*, 1958-59.

## CHAPTER III

# The Maturation of Electrical Engineering at MSM/UMR, 1959-Present

The launching of sputnik in 1957 was a significant date in the annals of engineering education for it signaled the beginning of the race for technological leadership between the United States and the Soviet Union. The American public provided a mandate for winning this race, and funds became available from private and government agencies for scientific and technological research. For instance, the National Defense Education Act of 1958 placed higher education within the grasp of any student with the intellectual capacity to earn a college degree. In the early 1960s President Kennedy announced his hopes for landing an American on the moon before the end of the decade. All these factors made scientific training and research a desirable commodity. Technological institutions possessed the greatest potential to profit from these societal priorities.

American universities increased spending for research and development from \$334 million in 1953 to \$2.6 billion in 1968.<sup>1</sup> In order to obtain these funds, universities, more than ever, came to rely upon federal agencies.

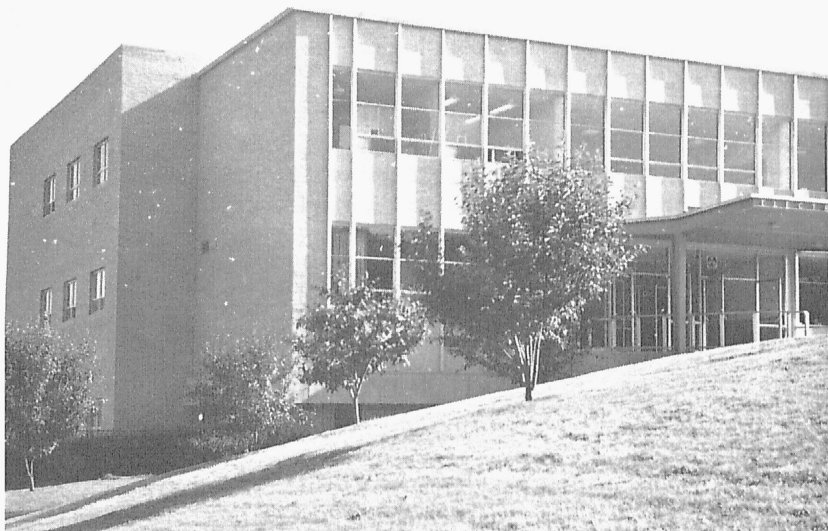
By the 1970s, national priorities expanded to areas such as energy conservation. Along with the shift in interest, the more farsighted engineering educators anticipated a decline in government-sponsored research and anticipated a greater need for a closer working relationship between universities and industry.

Electrical engineering education reflected the national interests of the 1960s and 1970s for electrical engineers would increasingly be involved in meeting the nation's objectives whether they were the space race, defense contracts, or energy conservation. These new societal requirements, along with the new high technology of the 1970s and 1980s (very high-speed integrated circuits, fiber optics, super

computers, stealth missiles, laser communications, and direct digital satellites), made the profession more complex than ever. High-tech features were integrated into traditional specialties such as power and communications as well as into newer areas such as medical electronics and digital techniques. The most successful electrical engineering departments on America's campuses would be able to combine the traditional areas with the new. Given these complexities, the Ph.D. became the advanced degree required for those electrical engineers who planned careers in higher education and/or research.<sup>2</sup>

## A New Building at MSM

In the fall of 1959, the electrical engineering faculty could call a new three-story building home. Of reinforced concrete column and beam construction, the new building emphasized functional use. The



The north entrance of the Electrical Engineering Building.

ground floor included machinery laboratories, computation rooms, a photography lab, a network analyzer room, workshop, instrument room, and several other research rooms. The middle floor included space for eight large classrooms, a conference room, and offices for faculty and staff. The upper floor included a variety of electronics labs (circuits, measurements, radiation, and antennas, digital and analog

computers, and advanced networks), three spacious classrooms, an instrument room and repair shop, and a half dozen rooms that could serve as offices or research rooms.<sup>3</sup>

## The Development of a Modern Faculty

It was appropriate that Lovett served as department chairman at the time of the move to the new building, for the soft-spoken department chairman personified the continuity and tradition of electrical engineering at MSM. Lovett had been one of the two original members of the electrical engineering department at its inception in 1924. Lovett would step down as chairman in 1960 when he reached mandatory retirement age. He became the first professor emeritus of electrical engineering at MSM.

Ahead lay a series of exciting transformations in engineering education. At Rolla, the Missouri School of Mines and Metallurgy would soon become the University of Missouri at Rolla and, in 1968, the University of Missouri-Rolla.

As the new chairman, Roger E. Nolte would be responsible for directing the department during the transformation. Nolte had joined



Roger E. Nolte.

the faculty during the post-war expansion in 1949. During the mid-'50s he took a leave of absence to complete his Ph.D. at Iowa State. In the previous decade, the men who bore the burden of responsibility in the department included Lovett, Grimm, Skitek, Rittenhouse, and Nolte. Between 1956 and 1961, men like George McPherson (1956), Robert Nau (1957), Robert Chenoweth (1960), and Richard Harden (1960) joined the faculty. Each in his own way added to the professional



Robert H. Nau.

stature of the department. For instance, McPherson developed the modern power program at Rolla. Nau was a prolific publishing scholar, and Chenoweth and Harden had Ph.Ds.

When Nolte became department chairman in 1960, he inherited a department with a sound undergraduate program. Students, facilities, and the curriculum were firmly established and recognized. These accomplishments resulted from the work of the faculty of the past generation. For MSM's electrical engineering department of the 1960s, research was the area which required expansion. Those electrical engineering programs nationwide which would experience success would combine a good undergraduate teaching program with research complete with graduate degrees, good laboratory equipment, and federally supported research endeavors.

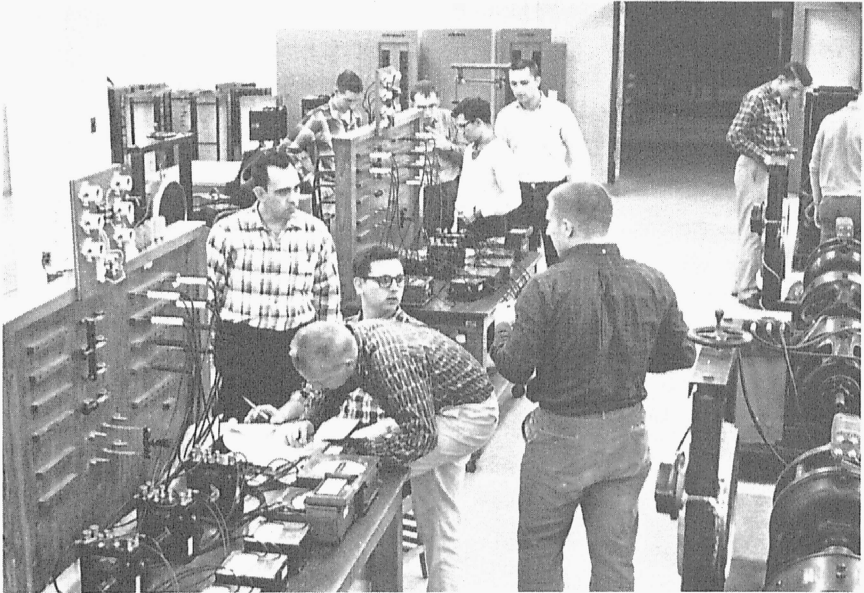


Top priorities under Nolte's leadership included recruiting faculty with the proper credentials for research in the 1960s and developing a Ph.D. graduate program in electrical engineering. The School administration cooperated with the department in achieving these objectives. In the early 1960s, several electrical engineers with doctorates joined the faculty, including J. Robert Betten (1962), Ralph Carson (1964), Edward Bertnolli (1965), and James Tracey (1965). Their research interests enabled the department to broaden its specialties beyond the traditional areas of power and communications to include computer systems, advanced electronics, and the like.



C. James Grimm.

In 1962, the University approved electrical engineering's proposal to offer work leading to the Ph.D. Electrical engineering became the seventh department on campus to gain such approval. Prior to this, electrical engineers who sought doctoral degrees at MSM earned them in a related area like engineering physics. In 1962, electrical engineering enjoyed the distinction of having the largest number of majors on campus (783) and 22 full-time faculty.<sup>4</sup> As in the past, electrical engineers at MSM had responded to needs in a positive manner. After 1962, the tempo of change on the Rolla campus accelerated, and the



Test instrumentation power laboratory.

electrical engineering department would be called upon to meet new challenges.

## From MSM to UMR

The school year 1962-63 represented the realization of an important objective for electrical engineering when the Ph.D. program gained approval. That year also represented the end of an era as Curtis L. Wilson, dean of MSM since 1941, prepared for retirement. He would be succeeded by Merl Baker, a mechanical engineer from Kentucky. As the campus adjusted to a new dean in 1963-64, faculty, staff, and friends also looked to the future and to an unprecedented period of growth and expansion. The state of Missouri acquired the University of Kansas City, converted the University of Missouri Normandy Residence Center into a two-year college, and combined these two with the Columbia and Rolla campuses to create the University of Missouri system.<sup>5</sup>

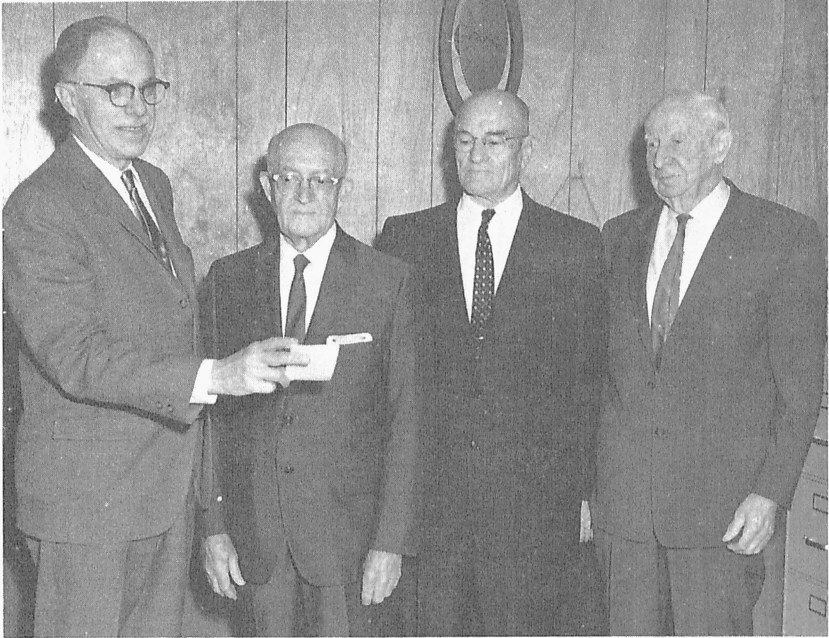
In 1964, the Missouri School of Mines and Metallurgy became the University of Missouri at Rolla. MSM had become a part of history. The

electrical engineering faculty at Rolla received the announcement of the name change with mixed emotions. Some preferred to keep the old name out of respect for tradition while others had advocated a name that more accurately reflected the modern thrusts of the campus such as the "University of Missouri School of Engineering and Sciences."<sup>6</sup>



J. Stuart Johnson.

The reorganization did not stop with a name change. Merl Baker, now Chancellor Baker, reorganized the campus into a School of Mines and Metallurgy, a School of Engineering, a School of Science, and a Graduate School.<sup>7</sup> Electrical engineering became a department in the School of Engineering, and before the decade was out, an engineer whose early career had been entwined with electrical engineering at MSM, J. Stuart Johnson, returned to Rolla to serve as dean of the School of Engineering. Johnson returned to a campus that had changed since his departure in 1944. In 1967, Johnson said, "the electrical engineering department had more faculty members and students than the entire school had when I left."<sup>8</sup> Expansion in the 1960s included an enrollment increase from 3,091 in the fall of 1960 to 5,285 in 1970. The faculty at Rolla increased from 243 in 1963-64 to 389 in 1970-71.<sup>9</sup>



J. Stuart Johnson, Israel Lovett, George Raney, and Floyd Frame.

## Department Chairmen—1959-1983

The electrical engineering faculty would have four of its five department chairmen during this modern period: Lovett (until 1960), Nolte, Betten, and Morgan. Nolte resigned his position in 1967 when he accepted an administrative post at the University of Miami (Florida).<sup>10</sup> J. Robert Betten succeeded Nolte as the department's fourth chairman in its then 43-year history. Betten, with a Ph.D. from Iowa State, had come to Rolla during the 1962-63 school year. It would be Betten's task to lead the department through a dramatic period of expansion as well as a period of constriction.

In 1978, J. Derald Morgan succeeded Betten. Although Morgan received his undergraduate degree from Louisiana Polytechnic Institute, he also was a product of MSM for he had earned an M.S. in electrical engineering from the School in 1965. Subsequently, he received a Ph.D. from Arizona State University before returning to Rolla. In 1976, Morgan became the first electrical engineer at Rolla to be

named the Emerson Electric Professor of Electrical Engineering. He and the faculty would face the challenge of coping with unprecedented enrollment increases at a time when funding made it virtually impossible to expand the size of the faculty.<sup>11</sup>

Under Nolte's leadership the faculty increased in size from 19 in 1960 to 37 in 1967. During the Betten years, faculty size ranged from 38 in 1968-69 to a high of 51 in 1970-71 (figures are from MSM or UMR



J. Robert Betten.

catalogues and numbers represent total faculty). Thereafter, enrollment decreased dramatically at UMR and faculty size diminished. The number of faculty in electrical engineering stabilized in 1977-78 and 1978-79 at 28 and increased slowly to the 1983 figure of 39 (including those with joint appointments and emeritus status). Of the faculty in the fall of 1983, all but three have earned doctorates.

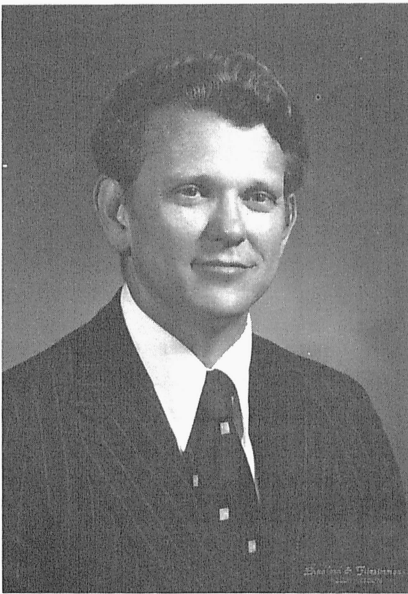
While specialties in 1959 emphasized traditional areas like power, electronics, and communication, those in 1983 included the traditional areas plus digital systems, solar energy, computer applications, and robotics.

After 1959, the electrical engineering faculty members also expanded their role beyond the structure of the department. In 1983, electrical engineering faculty served in UMR's Graduate Engineering Center

(Edward Bertnolli was director), the Electronics Research Center (J. Robert Betten was director), the Graduate Center for Cloud Physics Research (D. Ronald Fannin was an associate), and the Renewable Resources Research Center (Jack L. Boone and Thomas Van Doren were associates). In addition, William H. Tranter was assistant dean of engineering for graduate affairs and research and D. Ronald Fannin was assistant dean of engineering for undergraduate affairs.

## A Dynamic Department

In the past decade, electrical engineering at Rolla expanded its activities far beyond the traditional roles of teaching and research. Workshops, conferences, development and scholarship endeavors, and special relationships with industry had been characteristic of electrical engineers from UM-Rolla.

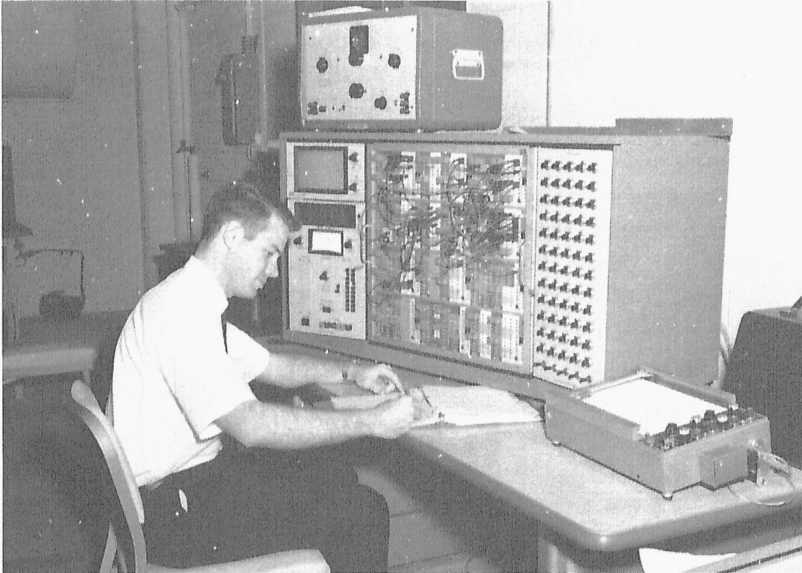


J. Derald Morgan.

In 1970, a UMR-Mervin J. Kelly Communications Conference set the tone for conference activities for the decade. In 1974, the department, in cooperation with the IEEE, sponsored the Midwest Power Symposium. The Rolla campus also hosted the first conference

on energy in 1974. The annual energy conference provided a useful international forum for all professionals in energy-related fields.<sup>12</sup> In 1977, a consortium of universities and industries including UMR developed an electrical engineering institute in Algeria.<sup>13</sup>

An Industrial Advisory Council was created in 1973. Made up of company officials who supported UMR's power programs, the council provided a critical bridge between the university and industries such as A.B. Chance, Aluminum Co. of America, Emerson Electric, Illinois Power Co., and Union Electric.<sup>14</sup>



Thomas Sears operating the transistorized analog computer.

The Visiting Industrial Scholar Assistance (VISA) program involved the acquisition of an industrial sponsor who financed a student to pursue graduate work. In turn, the graduate student spent three to four months each year working for the sponsor. The student benefited from the financial support, and, the sponsor, in turn, benefited from a researcher fresh from the academy's research laboratory.<sup>15</sup>

Those blessed with insight in the 1970s anticipated that state and federal funds would not be so readily available in the 1980s. This meant that private funding and support would, more than ever, be essential. In 1979, electrical engineering at UM-Rolla inaugurated a development program called BOLD THRUST to seek funds from

private sources for scholarships and fellowships, the purchase of laboratory equipment, and faculty enrichment.<sup>16</sup> The most successful outgrowth of this project was the Lovett-Grimm Tribute, a scholarship fund.

## Students—1959-1983

Since 1959, enrollment showed considerable growth, tempered slightly by a decline in the early 1970s. This was followed by a period of such expansion that overcrowded classrooms and laboratories in recent years were reminiscent of the period after World War II.

In the fall semester of 1959, a total of 3,039 students registered at MSM. That number included 143 graduate students, 32 women, and 632 electrical engineers. By the late 1960s, electrical engineering was the first UMR academic department to have over 1,000 majors.

In the fall of 1983, more than 7,000 students attended UM-Rolla. Nineteen percent of them were women, nine percent were graduate students, and some 1,300 were prospective electrical engineers. Many electrical engineering students were involved in the Minority Engineering Program and the Women in Engineering Program.



The Emerson Electric Co. Machines and Drives Laboratory, dedicated in 1984, shows Professor George McPherson with students.



During this period, graduates of the program made contributions to the state and nation, and the offspring of former students enrolled at their parent's alma mater. For example, Dr. George E. Mueller, an electrical engineer from the class of 1939, became deputy associate administrator for manned space flight of NASA in 1963.

The Academy of Electrical Engineers is a significant organization sponsored by the electrical engineering department. Founded in 1980 to honor outstanding electrical engineers, most of whom are graduates of MSM/UMR, the academy's members, in turn, serve as ambassadors for and advisers to electrical engineering at UM-Rolla. As of the fall of 1983 the Academy of Electrical Engineers had inducted the following persons into the organization:

## Academy of Electrical Engineers

### Charter Members

Wayne J. Bennetsen  
Thomas O. English  
Fred W. Finley  
C. James Grimm  
R. C. Hansen

Edwin W. Logan  
Israel H. Lovett  
Joseph W. Rittenhouse  
William A. Rutledge  
Hueston Smith

Leroy E. Smith  
P. Gene Smith  
Lawrence A. Spanier  
James W. Stephens

### Members

Ren Beatty  
Charles E. Boulson  
Charles E. Brinkmann  
Phillip O. Brown  
Fredrick B. Burns  
W. James Carr, Jr.  
Donald G. DeBolt  
Richard H. Duncan  
Chandrakant Gandhi  
Robert L. Hanna

Edwin L. Hughes  
J. Stuart Johnson  
Vernon R. Lawson  
Elmer L. Luehring  
Dennis E. Mason  
Robert L. Mayse  
Fred M. Mueller  
William F. Oberschelp  
James J. Skiles  
Gabriel G. Skitek

Harry B. Smith  
James A. Smith  
Hal A. Steinbruegge  
Robert A. Strain  
Jerry D. Swearingen  
Edward F. Tuck  
E. Harold Vannoy  
William D. Walker  
William A. Wundrack

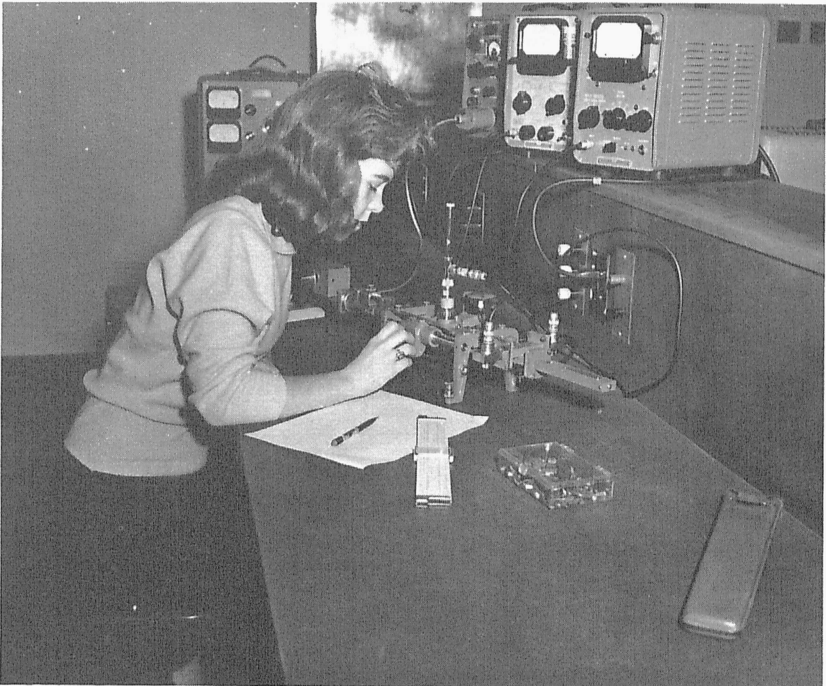
## Student Organizations

Electrical engineering students continued to be active in professional organizations. In 1962 the joint student branch of AIEE-IRE was the largest of its type in the United States. In 1963, these two prominent national professional organizations merged to form the Institute of Electrical and Electronics Engineers (IEEE).<sup>17</sup> UMR students had merged their student chapters some years before. The local chapter of Eta Kappa Nu continued to excel as illustrated when the

chapter won the national outstanding activities award for 1980-81, the highest award available. Eta Kappa Nu activities include participation in the annual departmental phone-a-thon for development, assisting in Electrical Engineering Career Day, providing guides for Parents' Day and University Day, and helping with the Phelps County Junior Miss Pageant.<sup>18</sup>

## Curriculum, 1959-1983

The undergraduate curriculum established in 1952-53 remained intact until the mid-'60s. The 1965-66 *Catalogue* for UMR illustrated the first major change for the period when credit hours for graduation were reduced from 148 hours to 143, excluding required courses in physical education, basic military science, algebra, and trigonometry. Basic military had been dropped as a requirement in the fall of 1964.



Martha Schultze conducting a measurement of standing wave voltage ratio using microwave equipment.

The catalogue for 1970-71 revealed more curricular alterations. By that time, 132 credit hours were required for graduation, excluding algebra, trigonometry, and basic military science. The curriculum of the 1980s remained at 132 credit hours. That included an "Introduction to EE," created by C. James Grimm, and a "Senior Seminar."

As in the past, the curriculum emphasized breadth although 1983 majors also could elect to emphasize one of the following areas: Circuits, Communications-Signal Processing, Computer Engineering, Control, Electromagnetics, Electronics, Power, and Solar Energy. The following degrees were offered in electrical engineering in the fall of 1983: bachelor of science, master of science, doctor of philosophy, doctor of engineering, and professional development degree.

The complete curriculum in electrical engineering as of the fall of 1983 was as follows:

FRESHMAN YEAR

<i>First Semester</i>	<i>Credit</i>
EE 10—Intro to EE.....	½
Chem 5—Gen Chem for Engr .....	4
Engl 1—Rhetoric & Comp.....	3
Math/Stat 8—Cal & Anal Geom I .....	5
Elective (Hist or Govt) <sup>1</sup> .....	3
Mil (if elected) <sup>2</sup> .....	1
	<hr/>
	16½

<i>Second Semester</i>	<i>Credit</i>
Math/Stat 21—Cal & Anal Geom II.....	5
Phy 23—Engr Physics I .....	4
Econ 110—Prin Econ I or	
Econ 111—Prin Econ II.....	3
Elective (Comm Skills) <sup>3</sup> .....	3
Mil (if elected) <sup>2</sup> .....	1
	<hr/>
	16

SOPHOMORE YEAR

<i>First Semester</i>	<i>Credit</i>
EE 61—Circuit Anal I <sup>7</sup> .....	3
CSc 73—Basic Sci Prog.....	2
Math/Stat 22—Cal & Anal Geom III .....	4
Phy 24—Engr Physics II.....	4
EMe 50—Statics .....	3
Mil (if elected) <sup>2</sup> .....	1
	<hr/>
	17

<i>Second Semester</i>	<i>Credit</i>
EE 63—Circuit Anal II <sup>7</sup> .....	3
Math/Stat 229—Diff Eq & Matx Th .....	3
EMe 150—Dynamics.....	2
Phy 107—Intro to Mod Phy .....	3
Elective (Hum/Soc Sci) <sup>4</sup> .....	3
Elective (Free or Tech) <sup>5</sup> .....	3
Mil (if elected) <sup>2</sup> .....	1
	<hr/>
	18

JUNIOR YEAR

<i>First Semester</i>	<i>Credit</i>
EE 212—EE Lab I.....	2
EE 265—Lin Cont—Time Sys .....	3
EE 271—Fields & Waves I .....	3
EE 253—Lin Electronic Circ.....	3
EE 211—Digital Sys Des.....	3
Elective (Hum/Soc Sci) <sup>5</sup> .....	3
	<hr/>
	17

<i>Second Semester</i>	<i>Credit</i>
EE 220—EE Lab II .....	2
EE 267—Lin Discrete—Time Sys .....	3
EE 273—Fields & Waves II .....	3
EE 254—Dig Elec Circ.....	3
EE 205—Electrical Machines .....	3
Elective (Hum/Soc Sci) <sup>5</sup> .....	3
	<hr/>
	17

## SENIOR YEAR

*First Semester* *Credit*

EE 230—EE Lab III .....	2
EE 231—Control Systems <sup>6</sup> .....	3
EE 251—Prin of Semicond <sup>6</sup> .....	3
EE 243—Com Systems <sup>6</sup> .....	3
EE 207—Power Systems <sup>8</sup> .....	3
Elective (EE 300-level Tech) <sup>5</sup> .....	3
	17

*Second Semester* *Credit*

EE 240—EE Lab IV .....	2
ME 227—Thermal Anal .....	3
Elective (Hum/Soc Sci) <sup>4</sup> .....	3
Elective (Free or Tech) <sup>5</sup> .....	3
Elective (Free or Tech) <sup>5</sup> .....	3
Elective (Free or Tech) <sup>5</sup> .....	3
EE 210—Seminar .....	½
	17½

Note: All electives must be chosen in conference with the student's adviser.

<sup>1</sup> Selected from Pol. Sci. 90 or Hist. 112 or Hist. 175 or Hist. 176.

<sup>2</sup> A total of 6 hours credit of Mil. Sci. may be used as free elective credit.

<sup>3</sup> Communications skills elective selected from E.T. 10, Sp. & M. 85, Engl. 160, or Engl. 181.

<sup>4</sup> 12 hours of humanities/social sciences electives are required from approved list of humanities/social sciences. 6 hours must be chosen from humanities courses. The balance may be humanities or social sciences.

<sup>5</sup> 9 hours of technical electives must be chosen from approved courses in schools of science or engineering, of which 3 hours must be chosen from E.E. 300-level courses, exclusive of E.E. 300 (special problems).

6 hours are free electives which may be taken on a pass/fail basis.

<sup>6</sup> E.E. 231, E.E. 243 or E.E. 251 may be delayed until the second semester senior year to allow earlier registration in technical electives.

<sup>7</sup> Minimum grade of "C" required by

department before registering in subsequent courses.

<sup>8</sup> Students emphasizing power should take E.E. 207 earlier.

## Emphasis Areas for Electrical Engineering

Note: The following emphasis areas identify courses from which a student may opt to develop an emphasis area. It is not required that students obtain an emphasis specialty in electrical engineering.

### Circuits:

E.E. 313—Microcomputer System Design

E.E. 343—Communications Systems II

E.E. 351—Advanced Electronic Circuits

E.E. 355—High-Frequency Amplifiers

E.E. 361—Computer-Aided Network Design

E.E. 363—Introduction to Circuit Synthesis

E.E. 367—Power Electronics

Math./Stat. 309—Advanced Calculus I

Math./Stat. 351—Introduction to Complex Variables

### Communications-Signal Processing:

E.E. 313—Microcomputer System Design

E.E. 341—Digital Signal Processing

E.E. 343—Communications Systems II

E.E. 379—Microwave Theory & Techniques

Math./Stat. 309—Advanced Calculus I

### Computer Engineering:

E.E. 312—Digital Systems Design Laboratory

E.E. 313—Microcomputer System Design

E.E. 315—Digital Computer Design

E.E. 341—Digital Signal Processing

E.E. 351—Advanced Electronic Circuits

C.Sc. 303—Software Systems Survey

Math./Stat. 305—Modern Algebra I

Control:

- E.E. 313—Microcomputer System Design
- E.E. 315—Digital Computer Design
- E.E. 317—System Modeling and Simulation
- E.E. 341—Digital Signal Processing
- E.E. 359—Feedback Control Systems II

Electromagnetics:

- E.E. 373—Antennas and Propagation
- E.E. 379—Microwave Theory and Techniques
- Math./Stat. 325—Partial Differential Equations
- Math./Stat. 309—Advanced Calculus I

Electronics:

- E.E. 335—Solar Energy Conversion
- E.E. 379—Microwave Theory & Techniques
- Math./Stat. 325—Partial Differential Equations
- Phy. 309—Physical Mechanics II
- Phy. 381—Elementary Solid State Physics

Power:

- E.E. 302—Extra High Voltage Engineering
- E.E. 337—AC Machines
- E.E. 357—Power Systems Engineering
- E.E. 359—Feedback Control Systems II
- E.E. 367—Power Electronics
- E.Mgt. 208—Engineering Economy
- E.Mgt. 345—Energy Management Engineering
- C.Sc. 218—Intro to Numerical Methods
- Nuc.E. 205—Principles of Nuclear Engineering

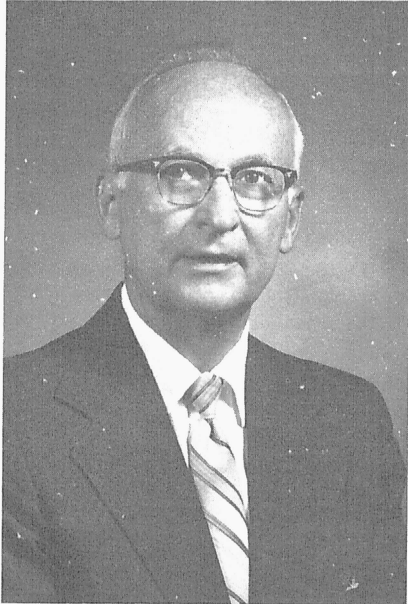
Solar Energy:

- E.E. 335—Solar Energy Conversion
- E.E. 336—Solar Energy Conversion Laboratory
- Math./Stat. 325—Partial Differential Equations
- M.E. 225—Heat Transfer
- Phy. 381—Elementary Solid State Physics
- Phy. 331—Optics<sup>19</sup>

Electrical engineering graduate students, as of 1983, could specialize in one or more of the following areas: circuits-electronics, communications-signal processing, computer engineering, control, electromagnetics, physical electronics, power, and solar engineering. Master of science degree candidates could take courses on campus or at the UMR Graduate Engineering Center, UMSL Campus. In addition, a Professional Development Degree, a post-baccalaureate degree, was available for those who wished to update their electrical engineering education without entering a traditional graduate program.

## Conclusion

If you walked into the Electrical Engineering Building at UM-Rolla in 1983, you would see the first- and third-floor laboratories equipped with facilities of which C.P. Williams could not have dreamed when he



Gabriel G. Skitek.

demonstrated the electric arc lamp on campus over 100 years ago. The program of 1983 was infinitely more complex than the course in electricity of the late 19th century, or, for that matter, it was more intricate than the curriculum that existed when Harry T. Heimberger became electrical engineering's first degree recipient at MSM.

Yet, the visitor also would find those important links to the past that provide continuity and stability. If you walked down the hallway of the middle floor, you would see that continuity in evidence on the doors of certain offices. Those included name plates of active and retired professors who were still important in the life of the department, extending back a generation, a half-century and more. The names included Johnson, Lovett, Grimm, Skitek, Nau, and McPherson.

The philosophy of the curriculum of 1983 remained essentially the same as that of 1917. Both Harry T. Heimberger, class of 1917 and the graduates of 1983 had been provided with a broad foundation in the discipline along with ample experience in practical applications. For Heimberger, these practical applications might have included vacuum tubes. For the 1983 graduate it included computers and lasers.

## Footnotes, Chapter III

- <sup>1</sup> Grayson, "Brief History of Engineering Education," p. 261.
- <sup>2</sup> Terman, "Brief History of EE," p. 1405.
- <sup>3</sup> *MSM Alumnus*, January-February 1959, p. 3.
- <sup>4</sup> *Ibid.*, October 1962, p. 7 and October 1963, p. 7.
- <sup>5</sup> Christensen and Ridley, *UM-Rolla*, pp. 186-88.
- <sup>6</sup> *Ibid.*, and Nolte Oral Interview.
- <sup>7</sup> *Ibid.*
- <sup>8</sup> J. Stuart Johnson, as cited in *Interface*, July 1977, p. 13.
- <sup>9</sup> Christensen and Ridley, *UM-Rolla*, p. 192.
- <sup>10</sup> *MSM Alumnus*, April 1967, p. 5.
- <sup>11</sup> *Current Transmissions*, I, No. 1, December 1976.
- <sup>12</sup> Christensen and Ridley, *UM-Rolla*, p. 204.
- <sup>13</sup> *Current Transmissions*, I, No. 4, December 1977.
- <sup>14</sup> *MSM Alumnus*, June 1973, p. 17.
- <sup>15</sup> *Current Transmissions*, VI, No. 1, December 1981-January 1982.
- <sup>16</sup> *Ibid.*, V, No. 3, July 1979.
- <sup>17</sup> *Current Transmissions*, VI, No. 3, April-May 1982.
- <sup>18</sup> *Current Transmissions*, VI, No. 2, February-March 1982.
- <sup>19</sup> University of Missouri-Rolla Undergraduate Bulletin, April 1982.





# Appendix

## Academy of Electrical Engineers

### Charter Members

Wayne J. Bennetsen  
Thomas O. English  
Fred W. Finley  
C. James Grimm  
R. C. Hansen

Edwin W. Logan  
Israel H. Lovett  
Joseph W. Rittenhouse  
William A. Rutledge  
Hueston Smith

Leroy E. Smith  
P. Gene Smith  
Lawrence A. Spanier  
James W. Stephens

### Members

Ren Beatty  
Charles E. Boulson  
Charles E. Brinkmann  
Phillip O. Brown  
Fredrick B. Burns  
W. James Carr, Jr.  
Donald G. DeBolt  
Richard H. Duncan  
Chandrakant Gandhi  
Robert L. Hanna

Edwin L. Hughes  
J. Stuart Johnson  
Vernon R. Lawson  
Elmer L. Luehring  
Dennis E. Mason  
Robert L. Mayse  
Fred M. Mueller  
William F. Oberschelp  
James J. Skiles  
Gabriel G. Skitek

Harry B. Smith  
James A. Smith  
Hal A. Steinbruegge  
Robert A. Strain  
Jerry D. Swearingen  
Edward F. Tuck  
E. Harold Vannoy  
William D. Walker  
William A. Wundrack

### Alumni Awardees

Wayne J. Bennetsen  
J. Robert Betten  
Donald G. DeBolt  
Thomas O. English  
Fred W. Finley  
Edward S. Fris

C. James Grimm  
Billy R. Jones  
Israel H. Lovett  
Sylvester J. Pagano  
Joseph W. Rittenhouse  
William A. Rutledge

Leonard L. Schuler, Jr.  
Gabriel G. Skitek  
Harry B. Smith  
James W. Stephens

## Eta Kappa Nu Association Membership

### Gamma-Theta Chapter

1952

Donald G. Bardon  
Paul H. Breazeale  
Homer E. Ceonce  
William Crawley  
John N. Davidson

John H. Dickerman  
Rodney E. Gilbreath  
Vernon E. Hackman  
David L. Hillhouse  
Kenneth Jenner

Mervin J. Kelly  
William P. Kimker, Jr.  
Ernest Peter Langerich  
Israel H. Lovett  
John G. Macke

George F. McCormick  
 Charles M. McDowell  
 William G. Meyers  
 Fred Mullersman  
 Joseph J. Murphy  
 Claude J. Osbourne  
 Robert J. Owens  
 William A. Paar  
 Charles C. Poe  
 Robert E. Rasche

Gene Reynolds  
 Joseph W. Rittenhouse  
 Michael C. Robel  
 James F. Ruhl  
 Wiley T. Ruhl  
 Gerald F. Sinnamon  
 Gabriel G. Skitek  
 Jerry Swearingen  
 Frederick R. Wagner  
 Joseph Watkins  
 Ronald R. Watson  
 John Zaborszky

1953

Campbell Craig Barnds III  
 Martin Walter Baryliski  
 William C. Blackwell  
 Earl Bunney  
 Frederick Brandt Burns  
 Donald Gessley  
 Harvey A. Hollingsheed  
 Richard Kaiser  
 Miklos E. Nagy  
 Richard L. Reeg  
 Henry F. Striegl

1954

Clarence Lee Alburdis  
 E. L. Crandell  
 F. M. Drummond  
 George J. Fiedler  
 David J. Freeman  
 Paul F. Gramlich  
 C. James Grimm  
 Robert L. Hanna  
 William E. Hugh  
 Edwin W. Logan  
 James F. Longshore  
 Elmer L. Luehring

Myron C. Lytle  
 Conrad L. Neal  
 M. Duane Sanner  
 Gerald D. Spann  
 Kenneth F. Steffan  
 Maurice E. Suhre, Jr.  
 E. F. Tuck  
 Spyros G. Varsos  
 Norman L. Walker

1955

James L. Abernathy  
 Ronald G. Alberter  
 William Alexander  
 Leslie S. Allen  
 Kjell Arneson  
 Bill Ashworth  
 Clyde W. Baxter  
 Robert L. Blount  
 Sam Bowman  
 Phillip O. Brown  
 Lowell G. Campbell  
 Gene C. Clodfelter  
 Ralph David  
 Frederick J. Dietrich  
 Carl W. Glaser  
 Dennis Gooding  
 L. D. Harrison  
 Eugene L. Hough  
 Albert F. Hutters, Jr.  
 Myron J. Johnson  
 Leonard J. Linde  
 Robert L. Mayse  
 Morton L. Mullins  
 Liston E. Neely  
 James J. Ridinger  
 John H. Schmedl  
 Dale Schruppf  
 Kenneth W. Shriver  
 Hueston M. Smith  
 James G. Smith  
 Harold A. Steinbruegge  
 James W. Stephens  
 Jack D. Stewart  
 John R. Troutner  
 Edgar D. Walton  
 Paul E. Zahn

1956

Wayne J. Bennetsen  
 Thomas A. Bertorello  
 Charles Boulson  
 Ronald D. Brennan  
 John P. Dever  
 Thomas W. Eaker  
 William R. Field  
 Paul D. Gerlach  
 Richard J. Konrad  
 Elliot Kurzman  
 David Lambert  
 Jerry D. Long  
 Bobby J. McConnell  
 James E. McNabb  
 Carl J. Meyer  
 David M. Morrison  
 Richard C. O'Dell  
 Craig G. Roberts  
 Orville L. Schaefer  
 Donald F. Sncek  
 Mack J. Stanton  
 David A. Sutton  
 James L. Taylor  
 Norval D. Wallace  
 Jack T. Wilson  
 Eugene N. Zesch

1957

Earl E. Anspach  
 William J. Barlow  
 Norris J. Bassett  
 Frank L. Baum, Jr.  
 William W. Beydler  
 Fred Borgini  
 Robert T. DeWoody\*  
 Melvin J. Dull  
 Albert J. Dusin, Jr.  
 William J. Ebert, Jr.  
 Thomas K. Garlich  
 John R. Giboney  
 Carl D. Griffith  
 James H. Hahn  
 William E. Hord  
 Donald D. Humphrey  
 James T. Jones\*\*  
 John C. Jones  
 James I. Latham

Leland L. Long  
 Robert L. Lukefahr  
 Richard L. Mason  
 Charles R. McGehee  
 William L. Metcalf, Jr.\*  
 Henry J. Mingo  
 Don E. Mitchell  
 Marquis B. Robinson  
 Harry K. Riggs  
 Lynn A. Rockwell  
 John J. Schiermeier  
 Donald F. Schwarz  
 Giles Sinkewiz  
 Roy F. Sloan  
 Homer D. Smith  
 Jimmie L. Smyth  
 Julius C. Strasbourger\*\*  
 James G. Taylor  
 Freeman T. Tingley\*\*  
 Sadegh M. Vakil  
 Robert E. Van Meter  
 William D. Walker  
 Charles A. Watts  
 James E. Weimholt  
 Albert W. Weinrich

1958

John C. Adams, Jr.  
 Wayne T. Andreas  
 T. E. Barfield\*\*  
 Lloyd W. Carpenter  
 Earl J. Charlson  
 Gary N. Denney  
 Gerald D. Dunigan  
 Larry L. Ferguson  
 Douglas Froemsdorf  
 Richard W. Grinder  
 Palmer H. Hadler  
 Wayne K. Hammond  
 Carl L. Henslee  
 Gilbert L. Hermann  
 Henry J. Holley  
 Joallan Hootman  
 Kenneth F. Hornkamp  
 James H. Johnson\*  
 Paul R. Jordan  
 Jimmie J. Justus  
 James F. Kauffman  
 Jerry C. Kendrick

Harold E. Lobaugh  
 Frederick W. Lynch  
 Albert L. Maisak  
 Jack E. McElroy  
 Paul B. Medley II  
 Robert G. Melvin  
 Jimmy D. Moses  
 Ronnie Northcutt  
 Marcellinus A. Orf  
 Daniel A. Pelhank  
 Paul E. Pepmiller  
 Oscar J. Potty\*\*  
 Tehuda A. Rachcvitsky\*  
 Louis C. Replho  
 James L. Risner  
 Edwin G. Schmitt  
 Robert K. Schuler  
 Ellis E. Shafer  
 Otis H. Smith  
 Anthony V. Steinman  
 Leo D. Stephens  
 Chester W. Sturgeon  
 Charles F. Swetitch  
 Roy L. Testerman  
 William J. Wheeler  
 David F. Winter\*\*  
 Paul R. Zacheis

1959

Donald Annis  
 Larry C. Amsler  
 Thomas Kent Bohley  
 Dwayne Brixey  
 Richard P. Brueggemann  
 Lloyd E. Brunkhorst  
 Donald W. Burlage  
 Stephen T. Chuck  
 Charles L. Coats  
 Emil L. Coffey  
 James D. Coffman  
 David L. Cook  
 Duane E. Cowan  
 John W. Crocker  
 Morrell C. Diebald  
 Vernon Dunn  
 Thaddeus F. Flood  
 Rex E. Fritts  
 George W. Fzc\*\*  
 Robert Glaser

F. L. Grismore, Jr.\*  
 Gary F. Hoech  
 John T. Holman  
 Naomichi Ito  
 Robert G. Jones  
 Richard R. Kapfer  
 Robert L. Kelley  
 Walter F. Kern  
 Donald R. Killian  
 John A. Kuntz  
 Willis D. Lawler  
 Kasem Malek  
 Thomas J. Martens  
 Billy W. Marshall  
 William McGovern  
 Robert C. McIntyre\*  
 Gary K. McNees  
 Wilbur F. Metcalf  
 Henry N. Peterson  
 Don J. Popp  
 Emmitt A. Reynolds  
 Earl F. Richards\*  
 Ben E. Roseberry  
 Wayne Ruck  
 Joseph G. Sargent  
 Don Sharon  
 Martha Shultz  
 Peter E. Simko  
 Gary E. Spencer  
 Franklin Standley  
 Larry Lee Stephens  
 Robert A. Strain  
 Jake R. Tims  
 Joseph F. Urekar  
 Donald E. Waldecker  
 William John Wolf, Jr.  
 John W. Woodward  
 Edward C. Wright, Jr.  
 Cecil G. Young, Jr.\*\*

1960

Ren Beatty\*\*  
 Leslie Blumberg  
 Harold F. Brady  
 Raymond C. Bretthauer, Jr.  
 Marvin Camp  
 Charles T. Erwin  
 Bill L. Gerhart

Paul Gitchos  
 William Gladney  
 John Grivdon  
 Thomas Hertel  
 Kenneth W. Henry  
 R. C. Horn\*\*  
 Barry House  
 Gerald E. Huck  
 Frank Edward Jacks  
 Benjamin W. H. Jaeger  
 James D. Kallmeyer  
 Burton H. Kinsworthy, Jr.  
 Warren Lawrence  
 Raymond W. Limbert  
 Alan L. McDonald  
 Larry S. Nanney  
 James T. Odom  
 Russell M. Ousley  
 John Peatman\*  
 Donald Z. Pierce  
 Paul D. Plaunick  
 Richard Reeves  
 Gerald Rencehausen  
 Blair A. Rowley  
 William H. Slacum  
 James A. Smith\*\*  
 Ellis Speicher  
 Paul D. Stigall  
 Thomas Van Doren  
 James A. Zychinski

1961

George D. Alexander  
 George J. Brenner, Jr.  
 Jose Briceño  
 Charles A. Byers  
 John L. Clements  
 Fred M. Dickey  
 Charles E. Diemer  
 Curtis W. Dodd  
 Paul W. Droll  
 David N. Everswick  
 Hugh B. Gardner  
 Gary Kent Glover  
 Byron W. Gordon  
 James M. Gormley  
 Louis W. Grespan  
 Harold D. Haertling  
 Lee Roy Haertling

Floyd S. Hall  
 Lowell D. Heath  
 Paul R. Hendricks  
 Rollie R. Herzog  
 Mark V. Holland  
 Jay Housholder  
 John K. Howell\*\*  
 Robert E. Huston  
 George M. Kinzmaier  
 John J. Komo  
 Gordon Link  
 Ernest W. Littleton  
 Arthur H. Loeschner  
 Charles E. McCrary  
 Jimmie C. Morgan  
 Gerald A. Nigg  
 Arthur W. Noble  
 Yasuto Don Nozawa  
 Bob J. Pully  
 Douglas A. Robbins  
 Lewis W. Shuck  
 Memphord L. Smith  
 Kent W. Swearingen  
 Melvin W. Uhl, Jr.  
 Don L. Willyard  
 Richard Woerner  
 Gungor Yildirim

1962

James J. Baremore  
 John F. Curtin\*  
 Michael Devaney  
 Walter Ronald Koenig  
 Palmer A. Lawson  
 Lowell D. Moore  
 Dewey F. Noles  
 Richard Pohl  
 Vincent P. Pusatani\*  
 David Seymour  
 Clifford O. Skouby  
 Billy T. K. Swift  
 Robert A. Taylor, Jr.  
 William J. Tito, Jr.  
 Gary Voorhis  
 Arthur Winter  
 Kei Yamane

1963

Wayne F. Balsman  
 Thomas D. Beckmann

Dennis R. Best  
 Eugene A. Branson  
 George E. Campbell  
 Philip J. Carter  
 Richard Carter, Jr.  
 Rudy M. Chittenden  
 Larry G. Cline  
 Olin K. Conley  
 John D. Corrigan  
 Reuben L. Crenshaw  
 Henry E. Fischer  
 Glen D. Fisher  
 Gene E. Gassner  
 Franklin D. Gastineau  
 John J. Goesten Kors  
 Myron E. Gruber  
 Richard C. Harden\*\*  
 John T. Hollaway  
 John R. Hudelson  
 Robert L. Keiser  
 Stanley P. Moon  
 Jack F. Morris\*  
 Donald Joe Morrison  
 Glenn A. Rahmoeller  
 Wayne L. Schoeffel  
 James T. Smith  
 Donald E. Spick  
 John F. Templeton  
 James Terry  
 Gene Thomas  
 John Thornton  
 Robert U. Untermachier  
 Glenn L. Van Doren  
 E. Harold Vannoy  
 Robert James Vogel pohl  
 James F. Wade  
 Curtis L. Wilson\*\*  
 J. Harlen Wilson

1964

Gary Andrews  
 Carl G. Ashly  
 Thomas E. Austin  
 Robert K. Baldwin  
 David E. Bergt  
 Maurice E. Brubaker  
 Gary D. Brunner  
 Frank A. Buchmeier, Jr.  
 James L. Butler

Charles H. Conley  
 Harry L. Creech  
 James R. Files  
 Richard J. Gillette  
 Daniel K. Goodman  
 Sidney R. Hamm  
 Roy Duane Hays  
 Harry P. Heibin  
 David E. Henard  
 Laurence L. Hilsenbeck  
 Kenneth W. Irwin  
 Richard D. Kelley  
 John David Layton  
 Glen A. Morton  
 Alan B. Mroch  
 Dale A. Munn  
 Loy D. Roberts  
 Ted C. Roffel  
 Leroy J. Royer  
 Owen D. Rude  
 Larry W. Silver  
 Harry Siliop  
 James D. Spencer  
 James E. Stangel  
 Shelby Turnbull  
 Larry V. Vaughn  
 Milton J. Wedeking  
 Philip White  
 Paul M. Wildt  
 William R. Wilson  
 Harold E. Zimnick

1965

R. Glenn Alexander  
 David Allen Bachman  
 John T. Barrow, Jr.  
 Richard Conrad Beckmann  
 Gregory Martin Bednar  
 Jonas Bereisa  
 William O. Blumfelder  
 Charles Robert Borgman  
 Kenneth W. Bowles  
 Robert D. Burch  
 Ralph S. Carson\*\*  
 James M. Carter  
 Ronald W. Carter  
 Joseph R. Chott  
 James D. Compton

Robert F. Cordes  
 Eddie Lee Crews  
 Douglas Wayne Dreisewerd  
 Walter Marion Ervin  
 Jimmie Fisher  
 Ralph B. Fluchel  
 John Robert Furby  
 Roger Wayne Garrison  
 Thomas K. Gaylord\*  
 Charles Duane Grace  
 Roger Martin Gray  
 Frank S. Greening  
 Dennis Greer  
 Will Griggs, Jr.  
 Michael D. Hallett  
 Charles L. Henry  
 John Hermann  
 Gary Gilbert Hoffstetter  
 Gary H. Horne  
 Paul E. House  
 Roger Hudson  
 Arthur Hummel  
 Robert Jasper  
 Robert L. Kettelkamp  
 Randall King  
 Ralph H. Kramer  
 Milton Lane  
 James E. Ledbetter  
 Anthony Lexa  
 David W. Lockner  
 Glenn Alden Lytle, Jr.  
 Michael B. McLeod  
 J. Thomas McMahan  
 Edward D. Miller  
 Michael R. Mruzik  
 Edward S. Muehl  
 Nicola Ann Nelson  
 Richard J. Otto, Jr.  
 Gary Owens  
 Robert Anthony Parks  
 Richard Robert Paul  
 Nixon A. Pendergrass  
 James B. Perkins  
 Clarence Donald Perr  
 James B. Peterson  
 Robert Charles Pierson  
 Hardy J. Pottinger  
 Larry Lee Robinson

Gary David Rueter  
 Norbert Henry Schmitz  
 Ernest W. Scott  
 Thomas J. Sears  
 Stephen Seitz  
 Edwin T. Shimamoto  
 Charles Dean Skinner  
 David Skitek  
 Robert B. Snell  
 David G. Sokol  
 Hugh Francis Spence  
 William J. Surdakowski  
 Clyde A. Tandival  
 Marion Tucker  
 Robert Turner  
 Robert Lyman Tyra  
 Lloyd Truman Umfleet, Jr.  
 Joseph L. VanMeter  
 Ronald P. Walters  
 Donald E. Watke  
 Larry Lee Wesner  
 Louis T. Zaman, III  
 Davy T. Zany

1966

Ronald Altman  
 Noel James Bell  
 John R. Brand  
 Garry S. Brown  
 Tom Brown  
 Robert A. Burkett  
 Thomas Campbell  
 William Coonce  
 Park DeJung  
 Wallace DeShon  
 William DuBois  
 Robert Duncan  
 Don K. Durand  
 Charles Edison  
 Ken Farris  
 Robert Feugate  
 Clyde Finch  
 Orville Finnigan  
 Matthew Gulick  
 James Hamilton  
 Gerald Hefferty  
 David Heilman  
 Donald E. Johnstone  
 Donald Kasten

Fred W. Kuchenig  
 George L. Long  
 Tim Luce  
 Benjamin A. Mason  
 Bill McCarty  
 Jim McGinnis  
 Robert McLain  
 Steven Miltenberger  
 Laird Moffett  
 Steven R. Musterman  
 D. M. Neal\*  
 Wendell D. Neumeger  
 John Oelger  
 Richard G. Olsen  
 Wilford Pomeroy  
 David Rause  
 Robert W. Roos, Jr.  
 Lester C. Roth  
 Larry Rushing  
 Richard I. Schoeffel  
 Faramarz Semnani  
 Kenneth Shuey  
 Ronald Sipes  
 David R. Slagle  
 Billy Smithson  
 James J. Spence  
 Kent Ulrich  
 Kirby C. Watson  
 David Weinrich  
 Van Weissflug  
 James Wiseman  
 John P. Wolf

1967

Steven Barr  
 John Barnes  
 Gordon Bell  
 Daniel E. Besterfeldt  
 Gene D. Biggerstaff  
 William J. Budt  
 Walter Collins  
 Thomas J. Dougherty  
 Ronald Engelbrecht  
 Kenneth W. Ervin  
 Richard W. Fowler  
 James M. Gill  
 J. C. Gilmore  
 Warren Dean Graham  
 Michael E. Gravitz

David L. Gray  
 Michael H. Harting  
 Allen Heaberlin  
 Alan T. Horn  
 Noel C. Hyde, Jr.  
 Donald I. Joggerst  
 Ronald A. Karger  
 William C. K. Karr  
 Samuel R. Law  
 Merlin Lindsey  
 Robert J. Livengood  
 Darrel A. Mank  
 Jimmy C. Massey  
 Robert F. McCrae  
 Joseph L. Mueller  
 Paul D. Mullenix  
 Larry E. Munn  
 David C. Nagy  
 Terry Nixon  
 William B. Olsen  
 Clayton G. Porter  
 Larry R. Reagan  
 Michael R. Reed  
 T. L. Roach  
 Harry Salomon, Jr.  
 John Schultz  
 Markus W. Smashey  
 David R. Spence  
 William A. Suszko  
 Robert G. Towne  
 Denny R. Townson  
 David Uricland  
 Stan F. Vaninger  
 Thomas R. Vass  
 Ronald J. Verhoff  
 Kenneth B. Wise

1968

William E. Abernathie  
 Harold R. Alexander  
 Michael E. Anderson  
 Don M. Ascoli  
 Jack T. Bourquin\*\*  
 Clark Brinker  
 Jerry K. Brown  
 Ronald D. Brown  
 Paul F. Cretin  
 William H. Curd, Jr.  
 William Doerf

Surin Dunnvatanachit  
 Robert W. Duston  
 Daryl Enke  
 Royce Fessenden  
 James L. Fullbright  
 Ronald G. Gerdes  
 James W. Graham III  
 Randle D. Hall  
 Timothy C. Hartmann  
 Jerry G. Hatfield  
 R. Dale Hensley  
 William Herzog  
 Charles E. Huebner  
 Ronald Jochum  
 Daniel H. Kruvand  
 Charles A. Leni  
 Kenneth W. Litteken  
 Carl H. McCormick  
 James B. McKelvey  
 Michael E. Mechlin  
 H. Edward Midden III  
 Gary Miller  
 Gary W. Neal  
 Frederick L. Newton  
 Thomas A. Niemeier  
 Steven G. Nigus  
 Wayne E. Omohundro  
 Donald R. Paul  
 Michael L. Renden  
 Michael W. Riley  
 William F. Rootz  
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 Marcus J. Schaefer  
 Eugene A. Schill  
 Donald W. Shaw  
 Richard E. Stewart  
 James R. Stigall  
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 Thomas J. Wille  
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 Joseph O. Elliott  
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 Richard C. Mues  
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 Harold Rossman  
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 Ralph Steudtner  
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1970

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 Dennis G. Anson  
 Richard Bartlett  
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 David G. Baxter  
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 Stephan J. Bengtholdt  
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 Michael R. Campbell  
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 Donald D. Taylor  
 Tery L. Taylor  
 Viner Tren  
 David Warfield  
 Daniel R. Williams  
 Terry A. Witthaus  
 Richard T. Wurtt  
 John R. Zugel
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 Paul Austin Abney  
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 Steven D. Bodenhamm  
 Scott T. Christian  
 David Stewart Durand  
 Dennis G. Garrison  
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 Kent L. Tallyn  
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 David M. Young
- 1975  
 Dennis C. Appel  
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 Philippe Chicoineau  
 Pham Quy Chot  
 James Detry  
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Craig L. Agne  
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 Michael G. Bayer  
 Robert Brand  
 Thomas E. Burbidge  
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 Russell C. Shipman  
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 Brian Keith Tucker  
 Scot Wilke  
 Teddy J. Wood  
 Thomas W. Ziegler

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R. Anthony Avena  
 Paul G. Baldetti  
 Paul Bisges  
 Ronald C. Bredenkamp  
 Alan R. Bright  
 Janey E. Burton  
 Michael W. Carpenter

Scott A. Coleman  
 Ken Copeland  
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 Andrew W. Bonnot  
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 Brenda Garman  
 Jim Haberstock  
 Elizabeth Lenhart  
 Duc Nguyen  
 Robert J. Tragesser  
 Cecilia Wempe  
 Craig A. Wohlers  
 Edward H. Wooldridge

1981

Timothy R. Adrian  
 Mike Amelss  
 Robert E. Armstrong  
 Ron Blankenhorn

Bruce C. Bowden  
 James C. Brohe  
 Renee Rigsley Busiek  
 Michael W. Coleman  
 Azita Dadmarz  
 Diann Johnson Dow  
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 Donald Hand  
 James R. Hanf  
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 Jim Marting  
 Steven McCallough  
 William McKinzie  
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 Dave Siegel  
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 R. Craig Simpson  
 David Lynn Smith  
 John Stuller  
 David Sumpter  
 Thien Xuan Tran  
 Kiwon S. Yoon

1982

David M. Anderson  
 Mike Brown  
 James C. Bullard  
 Richard S. Casebolt  
 Chris Cooper  
 Thomas J. Dalton  
 Dro Darbidian  
 Ronald W. Davidson

Mike Duello  
 Daniel Dziedzic  
 William Ebel  
 Mohammed Fotouhi  
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1983

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 Daniel J. Bicket  
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 David Burbridge

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Terry Cook	Russel Long	Dale Schwent
Pascal Dasilva	Keith W. Lueck	Nicholas R. Simpson
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Armin Kiamanish	Charles Popeck	
Ronald E. Krull	Kerry Rhea	* Graduate Level
Christopher Kurtz	Ted Roberts	** Professional Level
William Latham	Gregory Schmid	

### Honorary Degree Recipients

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Robert C. Hansen	James W. Stephens

### MSM/UMR Faculty in Electrical Engineering<sup>1</sup>

*1891 Austin Lee McRae	Herbert Crosby	Robert H. Nau
*1895 Arthur H. Timmerman	C. James Grimm	Giles C. Sinkewicz
1914 Floyd Hill Frame	Arthur W. Grove	John M. Usry
1917 Ralph E. Duffy	Horace R. Horton	1958 Lowell G. Campbell
1918 Rolland S. Wallis	William Murney, Jr.	Fred L. Grismore
*1919 Leon E. Woodman	John Zaborsky	Earl F. Richards
1920 Ryland F. Ratliff	1949 Edward Erdelyi	David E. Wunsch
1921 Israel H. Lovett	Walter Graham	1960 James I. Latham
1923 Joseph Worley	Roger Nolte	Leland L. Long
1925 George O. Ranes	G. G. Sunnaman	1961 Robert D. Chenoweth
1927 Charles A. Van Doeren	J. J. Skiles	Richard C. Harden
1937 J. Stuart Johnson	1953 David J. Freeman	Thomas J. Herrick
1943 Carl T. A. Johnk	Bienvenido C. Peralta	William E. Hord
Gabriel G. Skitek	1954 Floyd M. Drummond	Arne M. Nystuen
1946 Fred Beatty	Conrad L. Neal	John B. Peatman
William A. Ford	Jerry D. Swearingen	Lloyd E. Brunkhorst
1947 John W. Cappeck	1955 Freeman T. Tingley	1962 J. Robert Betten
William Feist	Robert T. DeWoody	Edward J. Brueggemann
Paul Gray	1956 Donald G. Bardan	John F. Curtin
John W. Hamman	William L. Metcalf	Charles A. Gross
Robert M. Montgomery	George McPherson	Ronald McNally
John W. Rittenhouse	Ferdinand H. Mullersman	Jack F. Morris
Richard D. Wheat	1957 Bill W. Ashworth	Russell M. Ousley
1948 Palmer L. Anthony, Jr.	Phillip O. Brown	Donald L. Willyard
John Barcroft	James H. Johnson	

\* Professors with appointments in physics who taught courses in electrical engineering

<sup>1</sup> Date refers to initial appointment at MSM/UMR

- |      |  |      |   |      |  |
|------|--|------|---|------|--|
| 1963 | O. S. Anderson<br>Leslie Blumberg<br>Thomas K. Bohley<br>Charles A. Gross<br>J. Derald Morgan<br>Donald R. Nelson<br>Terry B. Watson   |      | Clyde E. Vandivort<br>Thomas P. VanDoren  |      | D. Ronald Fannin<br>Darroll S. McCormack<br>David N. Montgomery<br>Ronald E. Nelson<br>Byong Ki Park<br>Richard T. Smith<br>William H. Tranter |
| 1964 | Ralph St. Clair Carson<br>Gary N. Denney<br>Richard F. Pohl  | 1967 | James E. Adair<br>Joseph L. Azarewicz<br>Jack L. Boone<br>Jack J. Bourquin<br>Glenn R. Case<br>Olin K. Conley<br>Richard F. Croll<br>Richard R. Kuenzer<br>Stanley V. Marshall<br>John S. Pazdera Jr.<br>Paul P. Sims<br>Leroy P. Venteicker<br>Dennis O. Wutanen | 1970 | Gordon E. Carlson<br>Paul D. Stigall<br>J. M. Taylor   |
| 1965 | Edward C. Bertnolli<br>Harley D. Brixey<br>Norman G. Dillman<br>Charles A. Goben<br>Ross Heitzman<br>Frederick W. Lynch<br>Gary K. Maki<br>Danny M. Neal<br>Thomas L. Noack<br>Robert C. Pierson<br>James H. Tracey<br>Leroy P. Venteicher | 1968 | Robert L. Altman<br>Kenneth R. Dunipace<br>Eddie R. Fowler<br>Burns E. Hegler<br>Thomas P. Hertel<br>Archie G. Lambert<br>Norman E. Levine<br>Robert F. Rice<br>Stephen A. Szygenda<br>*Don Sparlin<br>Rodger E. Zeimer   | 1972 | Michael Kavanaugh<br>Daniel Goodman  |
| 1966 | James J. Baremore<br>Glen R. Case<br>Olin K. Conley<br>Frank J. Kern<br>John E. Lundy<br>John A. Newell  | 1969 | David R. Cunningham<br>Darrow F. Dawson   | 1974 | Sultan Mahmood   |
|      |  |      |   | 1975 | Max D. Anderson  |
|      |  |      |   | 1978 | C. W. McDowell<br>Theodore McCracken   |
|      |  |      |   | 1979 | Kenneth H. Carpenter<br>Glenn W. Bills<br>Hardy J. Pottinger<br>John A. Stuller  |
|      |  |      |   | 1980 | Jerome Knopp<br>Arturo Miles   |
|      |  |      |   | 1981 | N. R. Cox<br>R. H. Moss<br>S. V. Rao   |
|      |  |      |   | 1983 | E. Strangas<br>C. H. Wu  |

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C. James Grimm

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1949—Donald E. Spackler

1945—Harold C. Brehe

1965—Clyde A. Vandivort

### Professional Degree Recipients

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Charles E. Boulson	Edwin W. Logan	P. Gene Smith
Harold F. Brady	Israel H. Lovett	Donald E. Spackler
Phillip O. Brown	Elmer L. Luehring	Lawrence A. Spanier
Delbert R. Cox	Robert F. McCaw	James W. Stephens
Donald G. DeBolt	Belding H. McCurdy	Robert A. Strain
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Robert E. Hackmann	Joseph W. Rittenhouse	Eugene H. Woodman
Robert L. Hanna	William H. Rollman	Joseph Worley
Kenneth O. Hanson	William A. Rutledge	William A. Wundrack
Frederic H. Holt	Harry B. Smith	

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# Alumni Directory

## Alphabetical Listing

- Abbott, John M. Jr. BS 1950 F1  
Deceased
- Abdollahpour, Ali R. BS 1981 F1  
Current Address Needed
- Abel, Fred S. BS 1970 F1  
11535 Wickshire Ct; Bridgeton MO  
630440000  
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Engr Estimator
- Abel, Scott W. MS 1968 F1  
6310 Jadecrest; Spring TX 773790000  
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Suite 224; Woodlawn TX 773800000  
Vice Pres
- Abeln, Herbert D. BS 1973 F1  
5840 Mango; St Louis MO 631290000  
Sverdrup Corp; 800 N 12th St; St Louis  
MO 631010000
- Abernathie, Dennis L. BS 1971 F1  
Requests No Mail
- Abernathie, William E. BS 1970 F1,  
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1601 Baltimore; Richardson TX  
750810000  
TX Instruments; 13500 N Central Expy;  
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- Abernathy, James L. BS 1957 F1  
1231 Hobson; St Louis MO 631350000  
McDonnell Douglas; P O Box 516; St  
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- Abkemeier, Kenneth A. BS 1963 F1  
7571 Skylark Dr; Parma OH 441300000  
Trane Co; Sales Engr
- Abney, Paul A. BS 1976 F1  
3542 Jubilee Tr; Dallas TX 752290000  
Microdynamics; 9641 Wendell Rd; Dallas  
TX 752430000 Mgr-Customer Serv
- Abrams, Hardin T. II BS 1964 F1  
2535 Lannger Dr NE; Cedar Rapids IA  
524020000  
Rockwell Intl-Collins Radio; 5200 C  
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- Abshier, Curtis B. BS 1970 F1,  
MS 1971 F1, PhD 1976 F1  
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740120000  
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- Abul-Husn, Rafe BS 1970 F1  
Al Mazroui & Partners; P O Box 2035;  
Abu Dhabi United Arab Emirates 88  
Mgr
- Acer, Brayton BS 1952 F1  
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- Acker, Ronald K. BS 1979 F1  
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630430000  
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- Adams, Ben M. BS 1948 F1  
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- Adams, David V. BS 1981 F1  
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- Adams, Eric B. BS 1975 D5, MS 1977 F1  
1365 Grand Ave; St Paul MN 551050000  
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Frvy; Bloomington MN 554200000  
Assoc Elec Engr
- Adams, Joe L. BS 1964 F1  
824 East St; Albemarle NC 280010000  
Yakdin Inc; President
- Adams, John C. BS 1959 F1  
1774 McKinley; Enumclaw WA 980220000  
Merrill Lynch Pierce Fenner & 820 A  
St, Suite 700; Tacoma WA 984020000  
Acct Exec
- Adams, John T. BS 1977 F1  
9226 13 Ave S; Minneapolis MN  
554170000  
Honeywell; Honeywell Plaza;  
Minneapolis MN 554270000  
Asst Evaluation Engr
- Adams, Roy H. BS 1944 F1  
327 Avocado; El Cajon CA 920200000  
Retired
- Adams, Wayne A. BS 1969 F1  
110 Sunnymeade Dr; Columbia TN  
384010000  
Union Carbide; Plant Engr
- Adamson, Charles D. BS 1982 F1  
Current Address Needed
- Adcock, Thomas C. BS 1926 F1  
Current Address Needed
- Aderer, Alexander P. BS 1965 F1  
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- Adkins, Carolyn S. (Nee Burchfield,  
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624 E 74th St; Kansas City MO  
641310000  
Black & Veatch; 1500 Meadow Lake Pkwy;  
Kansas City MO 641140000
- Adkins, Robert D. BS 1974 F1  
624 E 74th St; Kansas City MO  
641310000  
Kansas City Power & Light; 1330  
Baltimore; Kansas City MO  
Supv Corporate Planning
- Adkins, William S. BS 1970 F1  
1086 Lincoln Ct; San Jose CA 951250000  
Lockheed; P O Box 504; Sunnyvale CA  
940880000 Sr Research Engr
- Adrian, Timothy R. MS 1983 F1  
5360 Mild Drive; St Louis MO 63129  
McDonnell Douglas Corp; McDonnell  
Blvd; St Louis MO 631660000 Engineer
- Abel, Cleo F. Jr. BS 1967 F1  
1305 Greenmar Dr; Fenton MO 630260000  
AMAX; 6106 S Broadway; St Louis MO  
631110000 Electrical Project Engr
- Aghilli, Seyed S. BS 1980 F1  
Requests No Mail
- Agne, Craig L. BS 1978 F1, MS 1980 F1  
1602 Lena St; Garland TX 750400000  
TX Instruments; P O Box 226015; Dallas  
TX 752660000 Engr
- Ahluquist, Robert W. BS 1924 F1  
Deceased

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Almann, Gene H. BS 1971 F1  
410 1/2 N 9th Apt B; Quincy IL  
623010000  
Gardner-Denver Co; 1800 Gardner Expwy;  
Quincy IL 623010000  
Design Engineer I

Aker, Hasan O. MS 1951 F1  
Current Address Needed

Akers, Fred P. BS 1971 F1  
5508 Landsdowne; St Louis MO 631090000  
City of St Louis, MO; Hampton Ave; St  
Louis MO Traffic Engr

Akers, Steven M. BS 1973 F1  
7655 Claymore Ct W; Canton MI  
481870000  
Ford Motor Co; 20000 Rotunda; Dearborn  
MI 481240000 Prod Test Engr

Albatt, Gale I. BS 1971 F1  
75102 Still House Crk Rd; Chesterfield  
MO 630170000  
Olin Corp; Chief Elec Engr

Albers, Thomas J. BS 1983 F1  
5019 Murdoch; St Louis MO 63109

Albert, Gary W. BS 1976 F1  
10932 New Salem Cir; San Diego CA  
921260000  
McDonnell Douglas; Electronics Engr

Albert, Ronald C. BS 1974 F1  
6002 Stonewall #126; Greenville TX  
754010000  
E-Systems, Inc; P O Box 1056;  
Greenville TX 754010000 Des Engr

Alberter, Ronald G. BS 1958 F1  
818 Knightsbridge Ln; Schaumburg IL  
601950000  
Motorola; 2010 Algonquin Rd #201;  
Schaumburg IL 601930000 Acct Mgr

Albrecht, Paul N. BS 1963 F1  
515 Waterford Dr; Florissant MO  
630330000  
Mail Vendors; 5055 Natural Bridge; St  
Louis MO 631150000 Electronic Engr

Alburtis, Clarence L. BS 1954 F1  
Deceased

Alburtis, Lawrence E. BS 1953 F1  
3328 NW 64th; Oklahoma City OK  
731160000  
OK Gas & Elec; Engr

Aldridge, Don W. BS 1970 F1  
2908 N 34th; Mesa AZ 852030000  
Motorola; 5005 E McDowell Rd; Phoenix  
AZ 850080000 Applications Engr

Aldridge, Willis A. BS 1966 F1  
2004 Arapaho; Garden City KS 678460000  
Sunflower Electric Coop; West St John;  
Garden City KS 678460000  
Elec Engr-Generation Dept

Alexander, George D. BS 1963 F1  
P O Box 4234; Las Cruces NM 880030000  
NM State Univ; Box 3566; Las Cruces NM  
880030000 Asst Prof-Engr Tech

Alexander, Harold R. BS 1970 F1  
Apt A-3, P O Box 8405; Kansas City MO  
641140000  
Black & Veatch;

Alexander, Robert G. BS 1967 F1  
84 Misty Pine Rd; Fairport NY  
144500000  
Xerox Corp; Operations Res Analyst

Alexander, William C. BS 1940 F1  
11401 177th St Ct W; Illinois City IL  
612590000  
Retired

Alford, Richard E. BS 1975 F1  
Rt 5 Box 235C; Joplin MO 648010000  
Kingress; Project Engr

Allen, David W. BS 1973 F1  
1420 Marie St; St Charles IL 601740000  
General Mills Inc; Washington St &  
Town Rd; W Chicago IL 601850000  
Processing Superintendent

Allen, David W. BS 1979 F1  
3416 Colgate; Granite City IL  
620400000  
General Electric; Power System Engr

Allen, Eugene K. BS 1944 F1  
818 Weymouth Terr; Hampton VA  
236660000  
Retired

Allen, Herbert J. Jr. BS 1964 F1  
Route 3; Buffalo MO 656220000  
Litton Ind; 4811 W Kearney;  
Springfield MO 658030000 Mfg Engr

Allen, James B. BS 1949 F1  
Deceased

Allen, Jerry D. BS 1966 F1  
4785 Pine Cone Dr; Hermitage PA  
161460000  
Vestinghouse; P O Box 231; Greenville  
PA 161250000  
Mkt Mgr-Dry Distribution

Allen, John L. Jr. BS 1971 F1  
540 Emerson Cir; Bolingbrook IL  
604390000  
Sargent & Lundy; 55 E Monroe; Chicago  
IL 606030000  
Asst Head-Construction Mgr Div

Allen, Leslie S. BS 1957 F1  
1120 Atlanta Circle; Garland TX  
750430000  
Rockwell Intl; 3200 E Renner Rd C57;  
Richardson TX 750810000 Program Mgr

Allen, Spencer M. BS 1962 F1, MS 1967 N1  
Westinghouse; Box 1624; Baltimore MD  
212030000

Allen, Stephen L. BS 1978 F1  
Schlumberger; ARD Box 2779 Aramco Mid  
Est SA; Dhahran Saudi Arabia 63  
Cased Hole Sales Engr

Allison, Walter H. Jr. BS 1957 F1  
6801 Bradford Place; Laurel MD  
208100000

Almond, Jimmy E. BS 1958 F1  
PO Box 3102; Irving TX 750610000  
QEI Inc; 123 Northpoint Dr #139;  
Houston TX 770600000 Regional Mgr

Alsborg, Charles F. BS 1977 F1  
P O Box 23; Neshkoro WI 549600000  
North Amer Hydro Inc; P O Box 1663;  
fond du Lac WI 549350000  
Vice President

Alt, William P. BS 1978 F1  
9110 Landis; Beaumont TX 777070000  
Gulf States Utilities; P O Box 2951;  
Beaumont TX 777040000 Engr

Altepeter, Lawrence D. BS 1974 F1  
U S Army; 55 Signal Co 6 Cavalry  
Brigade; Fort Hood TX 765440000  
Captain

Altman, Ronald L. BS 1967 F1, MS 1969 F1  
29 Bennett St; Hudson MA 017490000  
Frequency Devices; 25 Locust St;  
Haverhill MA 018300000  
Director of Engr

Altman, William BS 1942 F1  
Deceased

Ameliss, Michael BS 1982 F1  
1725 Parktree Ln; St Louis MO  
631380000  
McDonnell Douglas; PO Box 516; St  
Louis MO 631660000

Amelung, Robert L. BS 1971 F1  
9706 Theodosia; Overland MO 631140000  
St John's Hosp; Elec Repairman

Amoroso, Arthur J. Jr. BS 1977 F1  
165 Webster Pl; Vernon Hills IL  
600610000  
Commonwealth Edison; 1 First Natl  
Plaza; Chicago IL 606700000 Engr

Amsler, Larry C. BS 1961 F1, MS 1963 F1  
8063 S Jackson St; Littleton CO  
801220000  
Martin-Marietta; P O Box 179; Denver  
CO 802010000 Unit Head

Anders, Kevin Douglas BS 1983 F1  
2118 Oberun Apt 24; St Louis MO 00000  
Union Electric; Engr

Anderson, Dan Morton BS 1982 F1  
1721 SE 5th Terrace; Lee's Summit MO  
640630000  
Bendix; 95th & Troost; Kansas City MO  
641410000



Anderson, David M. BS 1982 F1  
707 Averill Avenue; Ferguson MO  
631350000  
McDonnell Douglas;

Anderson, Gary S. BS 1973 F1  
7243 Marlton; St Louis MO 631230000  
City of St Louis, MO; 12th & Market,  
Rm 311; St Louis MO 631030000  
Building Lighting Engr

Anderson, Karen L. MS 1983 F1  
1811 Forum Dr Apt. 22; Rolla MO  
654010000

Anderson, Marc A. BS 1980 F1  
Sverdrup Corp; 801 N 11th St; St Louis  
MO 631010000

Anderson, Michael B. BS 1973 F1  
2719 King James Way; Madison WI  
537190000  
WI Power & Light; 222 W Washington  
Ave; Madison WI 537030000 Rate Engr

Anderson, Michael E. BS 1969 F1  
1674 Longspur Ave; Sunnyvale CA  
940870000  
Intersill Systems; Engr Mgt

Anderson, Walter E. BS 1967 F1  
330 S Tracy; Clearwater KS 670260000  
Southwestern Electric;

Anderson, William F. BS 1974 F1  
Route 2; Lincoln MO 653380000

Andjelich, David N. BS 1968 F1  
2006 E Magdalena Dr; Tempe AZ  
852830000  
Motorola; 8201 E McDowell Rd;  
Scottsdale AZ 852570000  
Program Manager

Andreas, Clifford C. BS 1981 F1  
1806 Woodridge; Florissant MO  
630330000  
McDonnell Douglas; PO Box 516; St  
Louis MO 631660000

Andreas, Wayne L. BS 1958 F1  
1802 Whitefeather Trail; Crosby TX  
775320000  
L Exxon; P O Box 4008; Baytown TX  
775220000 Sr Staff Engr

Andrews, Gary W. BS 1965 F1  
RR 2 Box 326A; Belton MO 640120000  
Bendis; 95th & Frost; Kansas City MO  
641310000 Engr

Andrews, Robert L. BS 1970 F1  
R 4, B 280A, Independence; St Charles  
MO 633010000  
McDonnell Douglas;

Angeli, Bartholomew P. BS 1981 F1  
8954 Laclede Station Rd; St Louis MO  
631230000  
Union Electric; PO Box 149; St Louis  
MO 631660000 Asst Engr

Anneaux, Dwight J. BS 1966 F1  
2853 Wofford; Charleston SC 294070000  
U S Navy; U S Naval  
Shipyard-Charleston; Charleston SC  
294110000 Nuclear Engr

Annis, Donald J. BS 1961 F1  
22 Holiday Hill; Endicott NY 137600000  
IBM; RL 17C; Oswego NY 138270000  
Engineering Mgt

Anson, Dennis G. BS 1971 F1  
10046 NW 17th St; Coral Springs FL  
330650000  
Motorola; 8000 W Sunrise Blvd; Ft  
Lauderdale FL 333220000  
Sr Staff Engr

Anspach, Earl L. BS 1958 F1  
402 Heights Ave; Tullahoma TN  
373880000  
Sverdrup Technology Inc; AEDC Div;  
Arnold AFS IN 373890000 Sr Engr

Anthony, Palmer L. Jr. MS 1953 F1  
U S Navy; Ammunition Dept; Mc Alester  
OK 745010000 Civilian Dir

Aoufi, Rabah MS 1980 F1  
3212 W Country Club 123; Irving TX  
750620000  
De Vry Inst of Technology; 4520 N  
Bellline; Irving TX 750620000  
Instructor

Appel, Dennis C. BS 1977 F1  
1505 Flamingo; Arlington TX 760120000  
General Dynamics; P O Box 748; Ft  
Worth TX 761010000 Associate Engr

Apprill, Michael R. BS 1970 F1  
8505 E 85th Terr; Raytown MO 641380000  
MO Public Serv Co; Mgr-Electric Oper

Arand, Marc A. BS 1978 F1  
2 Jenny Lind; St Peters MO 633760000  
Hewlett-Packard; 1024 Executive Pkwy;  
St Louis MO 631410000 Customer Engr

Arasmith, Robert F. BS 1980 F1  
3418 W Bellefontaine; Kansas City MO  
641170000  
NGR Co; 3718 N Rock Rd; Wichita KS  
672260000 Des Engr

Archer, J. Fred BS 1970 F1, MS 1971 F1  
3716 Laura Ct Dr; House Springs MO  
630510000  
AT&T-Southwestern Bell; 100 North 12th  
Blvd; St Louis MO 631010000 Sr Engr

Archibetti, Dean K. BS 1980 F1  
1508 Savannah Dr; Stidell LA 704580000  
Honeywell; 13350 Hwy 19 Bx 11568; St  
Petersburg FL 33730000  
Field Support Engr

Arens, Robert A. BS 1975 F1  
12132 Jerries; Florissant MO 630330000  
McDonnell Douglas; P O Box 516; St  
Louis MO 631660000

Arensman, James W. BS 1965 F1  
Current Address Needed

Arensmeyer, Jeffrey N. BS 1981 F1  
895 Highview; Tenton MO 630260000  
Sachs Elec Co; 16300 Justus Post Rd;  
Chesterton MO 630170000  
Design Engr

Arfman, Robert W. BS 1952 F1  
1253 E 91st Street; Indianapolis IN  
462040000  
AT&T-Western Electric; 2525 N  
Shadeland Ave; Indianapolis IN  
462190000 Proj Engr

Armintrout, Timothy L. BS 1980 F1  
4433 N Valtrond; Kansas City MO  
641170000  
Black & Veatch; 1500 Meadow Lake Pkwy;  
Kansas City MO 641410000 Assoc Engr

Armistead, James W. BS 1981 F1  
702 James St; Washington MO 630990000  
Westinghouse; 2060 Grayshire Rd;  
Creve Coeur MO 631410000 Field Engr

Armstrong, James R. BS 1967 F1  
3924 Arbro Ln; Florissant MO 630340000  
Procter & Gamble; 169 East Grand; St  
Louis MO 631470000 Elec Engr

Armstrong, Richard L. BS 1952 F1  
10008 Conrad Dr; Huntsville AL  
358030000  
U S Army; Product Assurance

Armstrong Jr., Robert MS 1983 F1  
1552 E Walnut Lawn; Springfield MO  
65804

Arnesen, Kjeil BS 1957 F1  
2418 Royal Oaks Dr; Alamo CA 945070000  
Solar Clinic; Salesperson

Arnold, Anthony BS 1982 F1  
1520 Thrush Terr; St Louis MO  
631440000  
Ralston Purina; Checkerboard Sq; St  
Louis MO 631880000 Design Engr I

Arnold, Daniel W. BS 1981 F1  
8235 Jay Ct; Arvada CO 800030000

Arnold, Harold D. BS 1931 F1  
Deceased

Arnold, Richard L. BS 1969 F1  
2751 Hwy 21A; Festus MO 630280000  
Monsanto;

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Arnold, Robert D. BS 1969 F1, MS 1975 M1,  
PDD 1979 F1  
12935 W Watson; St Louis MO 631270000  
A1&T-Southwestern Bell; 100 N Broadway  
Rm 1110; St Louis MO 631020000  
Dist Staff Mgr-Network Mech  
Arnold, Robert W. BS 1979 F1  
12513 Fox Hollow Ct; Austin TX  
787290000  
TX Instruments; P O Box 226015; Dallas  
TX 752660000 Engr  
Arras, Jean M.L. (Nee Lloyd, Jean M.L.)  
BS 1944 F1  
Apartamentos La Toja; El Grove Ponte  
Ver Spain 65  
Housewife  
Artman, Anthony J. BS 1973 F1  
2214 Guebert; Fenton MO 630260000  
Union Electric; 1901 Gratiot Box 149;  
St Louis MO 631660000 Engr  
Ascanio-Garcia, Carlos F. BS 1969 F1  
Electricidad De Caracas; Av  
Vollmer, San Bernardino; Caracas  
Venezuela 74 Const Engr  
Ascensio, Carlos A. BS 1965 F1  
716 N Prospect; Kansas City MO  
641200000  
Honeywell; 8401 E 50 Hwy; Kansas City  
MO 641330000  
Temperature Ctrl Sales Rep  
Aschinger, Eric D. BS 1970 F1  
9706 Fall Ridge Trail; St Louis MO  
631270000  
Aschinger Electric Co; 4131 Meramec;  
St Louis MO 631160000  
Exec Vice Pres/Gen Mgr  
Ascoli, Don M. BS 1969 F1  
1404 E Dunbar; Tempe AZ 852820000  
Applied Comp/Roadrunner Softw; 1404 E  
Dunbar; Tempe AZ 852820000 Owner  
Aselman, Edward C. Jr. BS 1978 F1  
Current Address Needed  
Ashbaugh, Billy G. BS 1973 F1  
Deceased  
Ashley, Carl G. BS 1964 F1  
1062 Via Cielito; Ventura CA 930030000  
U S Navy; Pacific Missile Testing Ctr;  
Pt Mugu CA 930410000 Elec Engr  
Ashmore, James H. BS 1950 F1  
30152 Via Victoria; Rancho Palos Verde  
CA 902740000  
Aerospace Corp; Aero-Physicist  
Ashworth, Bill W. BS 1957 F1, MS 1961 F1  
5137 W Laurie Ln; Glendale AZ  
853020000  
Goodyear; Engineering Specialist  
Asseo, Sabi J. MS 1958 F1  
Current Address Needed  
Astolfi, Richard L. BS 1970 F1  
7243 129th Ave SE; Renton WA 980550000  
Weyerhaeuser Co; Engr  
Astudillo C, Humberto J. BS 1979 F1  
Current Address Needed  
Ata-Abadi, Parviz BS 1967 F1  
Requests No Mail  
Atkins, Ronald D. BS 1974 F1, MS 1976 M1  
Procter & Gamble-Charmin; P O Box  
1747; Albany GA 317020000  
Rely Prod Team Mgr  
Atwell, Harold E. BS 1956 F1  
BCI Corp; P O Box 935; Rolla MO  
654010000 President  
Aubuchon, Jack L. BS 1971 F1  
Current Address Needed  
Auckly, Gerald W. BS 1968 F1  
6216 E 107th Terr; Kansas City MO  
641340000  
Bendix; 95th & Bannister; Kansas City  
MO 641410000 Sr Engr Staff  
Audrain, Charles E. BS 1972 F1  
8421 Elm; Raytown MO 641380000  
Bendix; 1900 Bannister Rd; Kansas City  
MO 641410000 Prod Engr  
Aufmuth, George R. BS 1976 F1  
240 Nancy Pl; Ballwin MO 630110000  
IL Power Co; 500 S 27th St; Decatur IL  
625250000 Asst Engr  
Auman, Harry J. BS 1970 F1  
1305 Dallwood; Crestwood MO 631260000  
Austin, Buddy J. BS 1960 F1  
7941 Ramsdell Dr NE; Rockford MI  
493440000  
G R Mfg Co; Vice President-Engr  
Austin, Eugene D. BS 1980 F1  
Deceased  
Austin, Thomas E. III BS 1965 F1  
8351 Elmcrest; Huntington Beach CA  
926460000  
Hughes Aircraft; 1901 W Malvern;  
Fullerton CA 926340000 Tech Staff  
Avena, Robert A. BS 1979 F1  
4821 Sunnyview; St Louis MO 631280000  
McDonnell Douglas; P O Box 516; St  
Louis MO 631660000 Assoc Engr  
Averweg, James BS 1969 F1  
4632 Main; Davenport IA 528060000  
Iowa & Illinois Gas & Elec Co;  
Superintendent  
Avilj, Behnam BS 1972 F1, MS 1974 M1  
Current Address Needed  
Ayars, Robert S. BS 1968 F1  
237 Canada Way; Los Alamos NM  
875440000  
Control Data Corp; 8100 34th St S;  
Minneapolis MN 554200000  
Sr Sys Analyst  
Azuma, Yasuhiro BS 1980 F1  
5-3-32 Suehirocho; Tokushima Japan 45  
Bachman, David A. BS 1966 F1  
821 Alden Dr; Corpus Christi TX  
784120000  
Reynolds Metals Co; Hurricane Crk Plt;  
Bauxite AR 720110000 Power Supt  
Backer, Lewis C. BS 1965 F1  
#1 Inwood Ct; St Charles MO 633010000  
McDonnell Douglas; P O Box 516; St  
Louis MO 631660000  
Bade, Norman D. BS 1973 F1  
32 James Dr; St Charles MO 633010000  
McDonnell Douglas; P O Box 516; St  
Louis MO 631660000  
Lead Engr-Electronics  
Baechle, August A. BS 1957 F1  
306 High Meadows Dr; Ballwin MO  
630110000  
Elec Apparatus Serv Assoc; 7710  
Carondelet; St Louis MO 631050000  
Executive Vice-Pres  
Baechle, Steven F. BS 1982 F1  
4803 Altano Plaza; Yorba Linda CA  
926860000  
Fleet Analysis Center;  
Electronics Engr  
Baginski, David James BS 1982 F1  
252 B Skinner Ct; Redstone AL  
358080000  
U S Army; Signal Corps; Ft Gordon GA  
309050000  
2nd Lt/Communications Elec Engr  
Bagley, William C. BS 1979 F1  
115 S Tom; Webb City MO 648700000  
Murphy Cardinal Electronics; 203 E  
Daugherty; Webb City MO 648700000  
Elec Engr-Software  
Bahler, Richard G. BS 1971 F1  
P O Box 27A; Champion NE 690230000  
Farmer  
Bailey, David E. BS 1964 F1  
8231 Parkhill Cr; Lenexa KS 662150000  
Bailey, Edward W. MS 1970 F1  
216 Westmoreland Dr; Collinsville IL  
622340000  
McDonnell Douglas; P O Box 516; St  
Louis MO 631660000 Group Engr  
Bailey, Frank W. BS 1930 F1  
Deceased  
Bair, George L. Jr. BS 1973 F1,  
MS 1974 F1, PhD 1976 F1  
502 S Lois Lane; Richardson TX  
750810000  
TX Instruments; 13500 N Central Expy;  
Dallas TX 752220000 Sr Engr

Baird, Eugene W. II BS 1965 F1  
121 Blairsden Ave; Carmel IN 460320000  
U S Civil Service;  
Naval Avion Facility Engr

Baker, Margaret Mary BS 1983 F1  
7701 E Osborn Rd #254; Scottsdale AZ  
852510000  
Motorola Inc; 8201 E McDowell;  
Scottsdale AZ 852520000 Engineer III

Baker, Philip L. BS 1970 F1, MS 1972 M1  
1122 Center; Cleburne TX 760310000  
Santa Fe International;  
Sr Industrial Engr

Baker, Richard L. BS 1967 F1  
805 Highway AB Box 38; Willard MO  
657810000  
Moore & Wolfenbarger; 312 Park Central  
East; Springfield MO 658060000  
Engineer

Baker, Robert J. BS 1973 F1  
RR 1; Morrison MO 650610000  
Union Electric;

Baker, Willard A. BS 1936 F1  
204 N Lucust; Marshfield MO 657060000  
Retired

Bakloh, Mahmoud M.Z. BS 1960 F1  
163 Kafar-Sousseh; Damascus Syria 70  
Electrical Inst;

Bakula, John C. BS 1970 F1  
144 Elm Tree Ln; Elmhurst IL 601260000  
Commonwealth Edison; 1 First Natl  
Plaza; Chicago IL 606700000  
Supervising Engr

Bald, Harry D. BS 1975 F1  
414 2nd St #306; Hermosa Beach CA  
902540000  
IRW; Technical Staff

Baldelli, Paul G. BS 1981 F1  
# 1 Emerald Ct; Harvester MO 633010000  
Emerson Electric; 8000 W Florissant;  
St Louis MO 631360000  
Productivity Consultant

Baldwin, Larry J. BS 1980 F1  
1606 Ridgeway Dr; Lees Summit MO  
640630000  
MO Public Serv Co; 10700 E 350 Hwy;  
Raytown MO 641380000  
Asst District Engr

Balke, John P. BS 1937 F1  
4715 Blue Ridge Cut-Off; Kansas City  
MO 641330000

Ball, Harley R. BS 1980 F1  
411 Lincolnwood Dr; Lee's Summit MO  
640630000  
RCA;

Ball, Robert D. BS 1950 F1  
3741 Crestcliff Ct; Tucker GA  
300840000  
Kearney Co; Box 49167; Atlanta GA  
303290000 Mgr Proj Engr

Ballantyne, John A. BS 1980 F1  
6543 Scott #5; Davenport IA 528060000  
Alcoa; P O Box 3567; Davenport IA  
528080000 Engr

Balfiew, Elaine A. (Nee Christian, Elaine  
A.) BS 1978 F1  
1028 Harrison Ave; Loveland CO  
805370000  
Hewlett-Packard; P O Box 301; Loveland  
CO 805370000  
Circuit Test Sale Dev Engr

Balfou, Ali N. BS 1980 F1, MS 1982 F1  
1664 Pinetree Ct; San Jose CA  
951310000  
National Semiconductor;

Balimat, Jack S. BS 1948 F1  
312 Springhaven Pl; Macungie PA  
180620000  
Bethlehem Steel; Retired

Balmsan, Wayne F. BS 1963 F1, MS 1964 F1  
629B Hilden Oak Dr; Crystal Lake IL  
600140000  
Baxter-Travenol Labs; PO Box 490;  
Round Lake IL Mgr-Process Ctrl

Bander, Anthony Paul BS 1983 F1  
125 St Eugene Lane; Florissant MO  
63033

Bange, Eugene E. BS 1951 F1  
8563 Middle Fork Dr; Boulder CO  
803020000  
Rockwell Intl; P O Box 464; Golden CO  
804010000 Res Spec

Bangert, David Brett BS 1982 F1  
12381 Log Post Ct #J; St Louis MO  
631410000

Banks, Leland L. BS 1960 F1  
Current Address Needed

Barber, George E. BS 1944 F1  
1721 Kimberly Drive; Sunnyvale CA  
940870000  
Retired

Barbers, Otis L. BS 1964 F1  
833 Marilyn; Liberty MO 640680000  
MO Public Serv Co; 10700 E 50 Hwy;  
Kansas City MO 641380000

Bardon, Donald G. BS 1953 F1  
1040 Fernwood Trail Ct; Florissant MO  
630317431  
McDonnell Douglas; P O Box 516; St  
Louis MO 631660000  
Technical Specialist

Baremore, James J. BS 1963 F1,  
PhD 1968 F1  
1005 Morina Ct NE; Albuquerque NM  
87120000  
AL&T-Sandia Labs; P O Box 5800;  
Albuquerque NM 871150000 Supervisor

Barkatullah, Syed A. BS 1971 F1  
Current Address Needed

Barker, Charles E. MS 1974 F1  
2800 Carmel Dr; Round Rock TX  
786640000  
Motorola; 3501 Id Bluestein Blvd;  
Austin TX 787210000 Sr Des Engr

Barker, Theron J. Jr. BS 1971 F1  
Rt 3 Box 7223; Mattoon IL 619380000  
Central IL Pub Service Co; 711 S Ninth  
St; Mattoon IL 619380000  
Sr Distribution Engr

Barkovitz, Alan L. BS 1981 F1  
995 Lyons Lane; Camden AR 717010000  
Intl Paper; Design Engr

Barlick, Larry F. BS 1965 F1  
7140 Galia Dr; San Jose CA 951290000  
Lockheed; 1111 Lockheed Way; Sunnyvale  
CA 940860000 Elec Research Engr

Barlow, Reese Allen BS 1982 F1  
PO Box 1654; Hailey ID 83333  
Powers Engr Inc; PO Box 1066; Hailey  
ID 833130000 Systems Engr

Barlow, William J. BS 1957 F1  
14509 Clark St; Crown Point IN  
46370000  
Purdue Univ-Calumet Campus; 2233 171st  
St; Hammond IN 463230000  
Asst Prof of Math

Barnds, Campbell C. III BS 1955 F1  
9848 Briar; Overland Park KS 662070000  
Arehart-Barnds-Rains Sales Inc; Box  
4623; Overland Park KS 662040000  
President

Barnes, Gerald F. BS 1961 F1  
7070 Valerie Dr; Florissant MO  
630330000  
Monsanto; Page Blvd; St Louis MO  
Senior Engr

Barnes, Johny J. BS 1970 F1  
16 Chapin Ln; Austin TX 787460000  
Motorola; Design Mgr

Barnes, Michael S. BS 1981 F1  
160 Flora; St Louis MO 631350000  
Emerson Electric; 8000 W Florissant Bx  
4100; St Louis MO 631360000

Barnett, Eugene H. BS 1963 F1  
400 Via Linda Vista; Redondo Beach CA  
902770000

Barnott, James L. BS 1978 F1  
Current Address Needed

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Barney, James S. BS 1950 F1  
275 Bryn Mawr Ave, Ap E54; Bryn Mawr  
PA 19010000  
General Electric; Sr Staff Engr

Barnhart, Herbert D. BS 1944 F1  
204 Micah Dr; Erie PA 165110000  
General Electric; 2901 E Lake Rd; Erie  
PA 165110000 Mgr-Engr Dev Lab

Baron, Adolph R. BS 1931 F1  
Deceased

Barr, Ralph S. BS 1965 F1  
85 Crusaders; Springfield IL 627040000  
Central IL Pub Service Co; 607 E  
Adams; Springfield IL 627010000  
Sys Plan Supv

Barrack, Nicholas E. BS 1975 F1,  
MS 1976 M1  
10 Steppendale; Rolla MO 654010000  
Central Security & Electric; P O Box  
1568; Rolla MO 654010000 Mgr

Barrie, Raymond E. Jr. BS 1960 F1  
49 Lakeside Dr; Esmond RI 029170000  
Tri-State Autom Warehouse; 459  
Washington St; Providence RI 029030000  
Vice President

Barris, Stephen N. BS 1974 F1  
15942 Silent Creek Ct; Chesterfield MO  
630170000  
Lithonia Lighting; Mkt Mgr

Barrow, Andy R. BS 1977 F1  
413 NW 43rd Terrace; Kansas City MO  
641160000  
Chevron Companies; 555 Market #1432;  
San Francisco CA 941050000  
Telecommunications Engr

Barrow, John T. Jr. BS 1967 F1,  
MS 1971 F1  
R R 1, Box 168-K; Tolleon AZ  
853530000  
AZ Public Service Co; 2121 West Cheryl  
Dr; Phoenix AZ 850210000 Engr

Bartels, David L. Sr. BS 1969 F1  
AT&T-Western Electric; 777 N Blue  
Parkway; Lees Summit MO 640630000  
Engr

Bartels, Kent W. BS 1963 F1  
113 Valley Forge; St Charles MO  
633016199  
McDonnell Douglas; Unit Chief

Bartlett, Gary R. BS 1971 F1  
998 Huntleigh; Naperville IL 605400000  
Natural Gas Pipeline; 122 So Michigan  
Ave; Chicago IL 606030000  
Director of Planning

Bartlett, Jeffrey D. BS 1983 F1  
P O Box 521; Waynesville MO 65583

Bartlett, Richard E. BS 1972 F1  
404 Elmwood; Vicksburg MS 391800000  
Bechtel; P O Box 41; Port Gibson MS  
391500000 Sr Start Up Test Supv

Bartley, William H. Jr. BS 1971 F1  
72 Tremont St; Newington CT 061110000  
Hartford Steam Boiler Insp; One State  
St; Hartford CT 061020000  
Sr Prog Mgr

Bartling, Donald L. BS 1963 F1,  
MS 1967 F1  
14 L Beehive Pl; Cockeysville MD  
210300000  
Westinghouse; 1111 Schilling Rd; Hunt  
Valley MD 210310000 Sr Engr

Barylski, Martin W. BS 1954 F1  
2 Delphinium Ct; Rockville MD  
208530000  
Johns Hopkins Univ; Applied Physics  
Lab; Laurel MD 208100000  
Asst Program Mgr

Basa, Laddie A. Jr. BS 1969 F1  
2136 Aquinas Ave; Claremont CA  
917110000  
Andrew California Corp; 1037 Ninth St;  
Upland CA 917860000 Des Engr

Basel, Dana L. Jr. BS 1972 F1  
RR 4 Cassidy Rd; Jefferson City MO  
651010000  
Westinghouse; 500 Westinghouse Dr;  
Jefferson City MO 651010000 Des Engr

Basler, Michael J. BS 1979 F1  
155 Sunray; Highland IL 622490000  
Basler Electric Co; Rt 143 Box 269;  
Highland IL 622490000 Elec Des Engr

Bassett, Norris J. BS 1959 F1  
1810 Edward Lane; Anderson IN  
460120000  
General Motors; Research Engr

Bassin, Ronald L. BS 1963 F1  
23 Goodhart Dr; Livingston NJ  
070390000  
Unify Corp; 55 Morris Ave; Morristown  
NJ 079600000 L Regional Sales Mgr

Bauche, Gary L. BS 1976 F1  
3223 St Joachim; St Ann MO 630740000  
McDonnell Douglas; P O Box 516; St  
Louis MO 631660000 Assoc Engr

Bauer, Alan C. BS 1974 F1  
P O Box 804; Dahlgren VA 224480000  
U S Navy; U S Naval Space Surv System;  
Dahlgren VA 224480000 Elec Engr

Bauer, Frank R. BS 1976 F1  
906 Harden Ct; Baltimore MD 212300000  
Bendix; 1400 Taylor Ave; Baltimore MD  
212040000 Sr Engr

Bauer, J. Bruce BS 1959 F1  
20234 Edinburg; Saratoga CA 950700000  
General Electric; 3120 De Guinge;  
Sunnyvale CA 940860000  
Reactor Engr Program Mgr

Bauer, Kurt I. BS 1981 F1  
P O Box 159; Imperial MO 630520000  
UMR; Electrical Engineering; Rolla MO  
654010000 Grad Student

Bauer, William Alfred BS 1982 F1  
11316 E 62nd St; Raytown MO 64133

Bauer, William C. BS 1967 F1, MS 1970 F1,  
MS 1977 D1  
PO Box 10862; Marina Del Rey CA  
902910000  
McDonnell Douglas; P O Box 516; St  
Louis MO 631660000  
Engr Rep-West Coast

Baum, Frank L. Jr. BS 1959 F1  
625 Winchester; Richardson TX  
750800000  
Rockwell Intl-Collins Radio; 1200 N  
Alma Rd; Richardson TX 750800000  
Program Mgr

Baumann, Richard E. BS 1978 F1  
1266 Woodlake Dr East; Palm Bay FL  
329050000  
Harris Gov Sys Group; PO Box 96000;  
Melbourne FL 329010000 Lead Engr

Baumann, Steven M. BS 1978 F1  
4108 Carolyn Dr; High Ridge MO  
630490000  
Union Electric; 1901 Gralot St; St  
Louis MO 631660000 Asst Engr

Baumgartner, Rupert P. BS 1928 F1  
10402 Camden Ave; Sun City AZ  
853510000  
Westinghouse Elec Corp; Retired

Baur, Richard A. BS 1961 F1  
3043 S Xanthia; Denver CO 802310000  
City of Denver; Dept Chief

Baxter, Clyde W. BS 1956 F1  
Current Address Needed

Baxter, David G. BS 1970 F1  
265 Buckland Ave; Rochester NY  
146180000  
Xerox Corp; 800 Phillips Road; Webster  
NY 145800000 Elec Engr

Baxter, Kenneth D. BS 1962 F1  
628 Oak Park Blvd; Cedar Falls IA  
506130000  
Deere & Co; P O Box 270; Waterloo IA  
507040000 Project Manager

Baxter, Thomas L. BS 1937 F1  
13327 Benford Dr; Houston TX 770830000  
Retired

Bayer, Gerald J. BS 1971 F1, MS 1974 M1  
9636 Big Bend; St Louis MO 631260000  
Benson Electric Co; 7216 Weil Ave;  
Shrewsbury MO 631190000 Estimator

- Bayer, Michael G. BS 1978 FI  
59 Daffodil Ct; Lake Jackson TX  
775660000
- Dow Chem Co; P O Box K; Freeport TX  
775410000 Instr Engr
- Bayless, James W. FI BS 1967 FI  
17451 Macduff Ave; Olney MO 208320000  
Bechtel Corp; Engineering Specialist
- Beach, Donald J. BS 1970 FI  
309 Harbor View Ln; Harbor Bluffs FL  
335400000
- Barry Wehmiller Co; 5300 Ulmertown Rd;  
Clearwater FL 335200000 Mgr-Engr
- Beach, Lester C. BS 1949 FI  
602 W Lismore Rd; Duluth MN 558030000  
IBM; Retired
- Beachler, Ray D. BS 1951 FI  
29211 Stonecrest Rd; Rolling Hills Est  
CA 902740000
- HRW Inc; 1 Space Park; Redondo Beach  
CA 902780000 Contract Mgr
- Bean, Andrew Stephen BS 1983 FI  
Rt 2 Box 75; Potomac MO 63664
- Beatty, Fred BS 1929 FI  
Deceased
- Beatty, Kenneth BS 1982 FI  
6220 Grinia Green Ct; Pinellas Park FL  
335650000
- I-Systems, Inc; Engr I
- Beatty, Ren BS 1930 FI  
Deceased
- Beauchamp, Robert W. MS 1978 FI  
36 Iadarola Ave; Milford MA 017570000  
Data General Corp; 15 Turnpike Rd MS  
91911; Westboro MA 015810000  
Comp Des Engr
- Bechtold, Duane H. BS 1969 FI  
1908 Lake Hill Ln; Plano TX 750230000  
AT&T-Southwestern Bell;
- Beck, Gordon I. BS 1969 FI  
4611 Locust; N Little Rock AR  
721160000
- Computronic Assoc; Programmer Analyst
- Beck, Philip J. BS 1977 FI  
2170 Calle Vista; Florissant MO  
630310000
- McDonnell Douglas; P O Box 516; St  
Louis MO 631660000 Des Engr
- Becker, James J. MS 1969 FI  
188 Canterbury Trail; Rochester MI  
480630000
- General Motors;
- Becker, Kenneth I. BS 1970 FI  
5673 Chalet Hill Dr; St Louis MO  
631290000
- U S Air Force; 1842 EIG/IFICB; Scott  
AFB IL 622250000 Elec Engr
- Beckley, Larry C. BS 1981 FI  
Current Address Needed
- Beckmann, Richard C. BS 1965 FI  
4101 Camino Dela Sierra; Albuquerque  
NM 871110000
- AT&T-Sandia Labs; P O Box 5800;  
Albuquerque NM 871150000
- Mbr Tech Staff
- Beckmann, Thomas D. BS 1962 FI,  
MS 1969 D7  
213 Emerling; St Louis MO 631210000  
Monsanto; 800 N Lindbergh Blvd; St  
Louis MO 631660000
- Computer Programmer
- Beckner, Mark W. BS 1977 FI  
29 W 468 Hawthorne Dr; Warrenville IL  
605550000
- AT&T-Bell Labs; Naperville Rd;  
Naperville IL 605400000 Res Engr
- Bednar, Gregory M. BS 1966 FI,  
MS 1970 FI, PhD 1972 FI  
Current Address Needed
- Bednar, Stephen J. BS 1969 FI  
2427 W 25th St N; Wichita KS 672040000  
Self Employed; Attorney
- Begley, David L. BS 1973 FI, MS 1976 FI,  
PhD 1978 FI  
13 Confederate Way; St Charles MO  
633010000
- McDonnell Douglas; PO Box 516; St  
Louis MO 631660000
- Behnke, James D. BS 1926 FI  
Deceased
- Bell, Gerhard Frank BS 1981 FI  
2802 E 28th St; Independence MO  
640570000
- Beinart, Donald R. BS 1960 FI  
9562 Pine Spray; St Louis MO 631260000
- McDonnell Douglas; P O Box 516; St  
Louis MO 631660000
- Bell, Gordon W. BS 1968 FI  
2302 Blue Hill Rd; Chesterfield MO  
630170000
- Authorized Refrig Parts Co; 301 S  
Vandeventer; St Louis MO 631100000  
Gen Mgr
- Bell, Marvin L. BS 1971 FI  
7911 Brighton Way; Manassas VA  
221100000
- American Systems Corp; Systems Engr
- Bell, Noel J. BS 1968 FI  
Current Address Needed
- Bellassi, Angelo G. BS 1973 FI  
1712 Glenwood Dr; IL Collins CO  
805260000
- Wack & Veatch; P O Box 8405; Kansas  
City MO 641140000
- Elec Control Field Res Engr
- Bellis, Maurice O. BS 1983 FI  
3310 Washington Ave #1206; Pascagoula  
MS 395670000  
Retired
- Bellora, Robert A. BS 1980 FI  
P O Box 9681; St Louis MO 631220000
- Belrose, Thomas C. BS 1964 FI, MS 1973 M1  
208 So Gore; St Louis MO 631190000  
U S Army; Engineer
- Belsky, Steven B. BS 1972 FI  
4292 S 124 St; Milwaukee WI 532280000  
General Electric; Mfg Engr
- Bernard, John BS 1934 FI  
D 30 Abington Dr; Hightstown NJ  
085200000  
Retired
- Bender, Frank J. BS 1962 FI  
945 Bolinas Rd; Fairfax CA 949300000
- Bene, Donald A. BS 1972 FI  
6309 Lansdowne Ave; St Louis MO  
631090000
- Anheuser-Busch; 721 Pestalozzi; St  
Louis MO 631180000 Elec Engr
- Benhardt, Harry A. BS 1971 FI  
12656 Meadowdale Dr; St Louis MO  
631380000
- Union Electric; Sioux Plant; St Louis  
MO Supy Engr
- Benigno, Joseph O. BS 1963 FI  
14 Orange Court; Wappingers Falls NY  
125900000
- IBM; 1000 Westchester Ave; White  
Plains NY 106040000 Marketing Div
- Benignus, Thomas D. BS 1979 FI  
47 Metcalf Dr; Belleville IL 622230000  
Emerson Electric; 8000 W Florissant Bx  
4100; St Louis MO 631360000  
Elec Engr
- Bennetsen, Wayne J. BS 1941 FI, ELIC  
I 1960  
1542 Mason Valley Rd; St Louis MO  
631310000
- Emerson Electric; 8000 W Florissant Bx  
4100; St Louis MO 631360000  
Vice Pres Corp Mfg
- Bennett, Harvey R. BS 1965 FI  
Current Address Needed
- Bennett, James E. BS 1980 FI  
8503 E 93rd Terr; Kansas City MO  
641380000
- Bendix; 95th & Holmes; Kansas City MO  
641410000 Assoc Engr

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- Bennett, John C. BS 1950 F1  
210 Ward Drive; Hampton VA 233690000  
Maida Development Co; 205 Libby St;  
Hampton VA 236630000  
Vice President-Engr
- Bennett, William F. BS 1949 F1  
17259 Bircher; Granada Hills CA  
913440000  
Retired
- Benoit, Charles M. PhD 1978 F1  
3518 Ridgemoor Dr; Garland TX  
750420000  
TX Instruments; P O Box 226015; Dallas  
TX 752660000 Systems Analyst
- Benson, Robert W. BS 1983 F1  
7338 Whitehaven; St Louis MO 631230000
- Benson, Steven D. BS 1979 F1  
707 Fernview Dr; St Louis MO 631410000  
Alvey Inc; 9301 Olive Blvd; St Louis  
MO 631320000
- Bentzinger, Robert BS 1971 F1, MS 1973 F1  
907 Thunderhead Dr; St Louis MO  
631380000  
Emerson Electric; 8100 W Florissant;  
St Louis MO 631360000 Engr Spec
- Berchin, Gregory BS 1982 F1  
1020 Claterri Dr; Ballwin MO 630110000  
McDonnell Douglas; PO Box 516; St  
Louis MO 631660000 Associate Engr
- Bereisa, Jonas Jr. BS 1967 F1, MS 1970 F1  
1512 Hillcrest; Santa Barbara CA  
931030000  
General Motors-Delco;
- Berg, Charles R. BS 1974 F1  
25 Woodward Ave; Wilmington DE  
198050000  
Self-Employed
- Bergfeld, Jerome V. BS 1968 F1  
800 Shadow Ridge; Irving TX 750610000  
United Technologies; 133 Las Colinas;  
Irving TX 750610000 Supervisor
- Berghuis, Stephen W. BS 1971 F1  
Union Theological Seminary; 3401 Brook  
Rd; Richmond VA 232270000  
Grad Student
- Berglar, Peter F. BS 1982 F1  
3602 Vista Oaks West; Palm Bay FL  
329050000  
Harris Corp; PO Box 37 MS 1-900;  
Melbourne FL 329010000 Engr
- Berglund, Paul T. BS 1940 F1  
1435 W Westview St; Springfield MO  
658040000  
Retired
- Bergman, Bruce W. BS 1978 D5, MS 1980 F1  
3811 Rolling Hill; Round Rock TX  
786640000  
IBM; 11400 Burnet Rd; Austin TX  
787580000 Sr Assoc Engr
- Bergstrom, Wallace J. BS 1953 F1  
16823 Westmoreland; Detroit MI  
482190000  
ComTel; Sales Engr
- Bergt, David E. BS 1965 F1  
5121 Valerie; Bellaire TX 774010000  
The Analysts Inc; 200 Macco Blvd;  
Sugarland TX 774780000  
Account Executive
- Bergtholdt, Stephen J. BS 1973 F1  
1934 Redwood Rd; Hercules CA 945470000  
Chevron Companies; Standard Ave;  
Richmond CA 945640000  
Supervising Engr #3 District
- Berkbigler, Larry W. BS 1971 F1,  
MS 1973 F1  
456 Aragon Ave; Los Alamos NM  
875440000  
Univ of Calif-Los Alamos Lab; P O Box  
1663, MS 957; Los Alamos NM 875450000  
Elec Engr
- Bermudez, Jose A. MS 1973 F1  
Current Address Needed
- Bernath, Jeffrey M. BS 1979 F1  
1127 Sandstone Dr; St Louis MO  
631460000  
Guild Co; 10795 Watson Rd; St Louis MO  
631260000 Field Engr
- Berry, Alok K. MS 1981 F1  
Nagogami Terrace Apt #142; Rolla MO  
65401
- Berry, Paul M. BS 1928 F1  
Deceased
- Berry, Wayne J. BS 1930 F1  
Deceased
- Berryman, Oscar C. BS 1981 F1  
51 Lewis Place; St Louis MO 631130000  
Monsanto; JF Queny Plant; St Louis MO  
Process Control Elec Engr
- Bertoglio, James V. BS 1971 F1  
Current Address Needed
- Bertorello, Thomas A. BS 1958 F1  
1300 Pamela Dr; Florissant MO  
630310000  
McDonnell Douglas; P O Box 516; St  
Louis MO 631660000  
Sr Electronics Engr
- Bertram, Jeffery P. BS 1975 F1  
9967 B Heritage Dr; Affton MO  
631230000  
Sprengnether Instr; 4150 Laclede; St  
Louis MO 631050000  
Automatic Sys Proj Engr
- Bertram, Norman J. BS 1974 F1  
4965 Parker; St Louis MO 631390000  
UMR; Grad Student
- Bertrand, Wilfred R. BS 1972 F1  
11707 Blair Meadow; Stafford TX  
774770000  
TX Instruments; PO Box 1443; Houston  
TX 770010000 Systems Engr
- Bess, James D. BS 1956 F1  
5543 Arthur; St Louis MO 631090000  
Union Electric; 1901 Gratiot St; St  
Louis MO 631660000 Supv Engr
- Best, Dennis R. BS 1965 F1  
Rt 7 Box 235f; Mc Kinney TX 750690000  
TX Instruments;
- Best, Gregory L. BS 1976 F1  
3322 Chapel Valley Dr; Quincy IL  
623010000  
Harris Corp; 3200 Wisman Road; Quincy  
IL 623010000 Lead Design Engr
- Besterfeldt, Daniel E. Jr. BS 1969 F1  
4 Laurel Hill Drive; Randolph NJ  
078690000  
AI&I-Western Electric; 475 South St;  
Morristown NJ 078690000 Dept Chief
- Bethards, Charles W. BS 1973 F1  
701 Evergreen Ct; Algonquin IL  
601020000  
Motorola; 2294 E Algonquin Rd;  
Schaumburg IL 601950000 Engr Mgr
- Bextermaier, James BS 1977 F1  
1573 Parsite; Cape Girardeau MO  
637010000  
Procter & Gamble-Charmin; Box 400;  
Cape Girardeau MO 637010000 Mgr
- Beydler, William W. BS 1959 F1  
Westinghouse;
- Bhatia, Premnath BS 1967 F1  
Current Address Needed
- Bhatia, Ram S. MS 1971 F1  
Current Address Needed
- Bible, Paul L. Jr. BS 1972 F1  
414 Atherton Dr; Garland TX 750430000  
GTE-Sylvania; 2611 Farrington; Dallas  
TX 752070000 Reg Control Mgr
- Biega, Mike Joseph BS 1983 F1  
106 Anniston; Las Cruces NM 880020000  
U S Army; 2nd Lt
- Bieser, Robert B. BS 1954 F1  
Deceased
- Biffignani, Michael J. BS 1979 F1  
7604 Suffold Ave; Shrewsbury MO  
631190000  
MCI Comm Inc; 1400 W Commercial; Ft  
Lauderdale FL 333090000  
Spec Prod Engr
- Biggerstaff, Gene D. BS 1970 F1  
4720 Groveton Way; St Louis MO  
631280000  
Union Electric; 1901 Gratiot; St Louis  
MO 631410000 Engr

- Bigley, Denis G. BS 1970 F1  
345 Bogey Ln; Kirkwood MO 631220000  
MO Hwy Comm; 329 S Kirkwood Rd;  
Kirkwood MO 631220000  
Maintenance Supv
- Bihl, Leland S. BS 1976 F1  
2821 Tall Oak Dr; St Louis MO  
631290000  
Union Electric; 1901 Gratiot St; St  
Louis MO 631660000 Engr
- Biggeer, Mehmet E. MS 1951 F1  
Deceased
- Billingham, Walter S. BS 1978 F1  
108 1/2 N 6th St; Marshalltown IA  
501580000  
Monsanto-Fisher Controls; 205 S  
Center; Marshalltown IA 501580000  
Engr
- Bingham, Lloyd W. Jr. BS 1966 F1  
14601 Locust; Olathe KS 660620000  
King Radio Corp; 400 W Rogers Rd;  
Olathe KS 660620000 Chief Test Pilot
- Bird, John Norman BS 1982 F1  
30 Greentree Lane; Kansas City MO  
641160000
- Birk, Gary N. BS 1974 F1  
3762 Canfield Ave #9; Los Angeles CA  
900340000  
Litton Ind; 5500 Canoga Ave; Woodland  
Hills CA 913640000 Sr Engr
- Birmingham, Angelo J. BS 1981 F1  
Rd 6 Box 378; Oswego NY 131260000  
Stone & Webster; 90 Broad St; New York  
NY 100040000
- Bisesi, Donald C. BS 1981 F1  
PO Box 312; Opelousas LA 705700000  
Schlumberger; PO Box 312; Opelousas LA  
705700000 Field Engr
- Bisges, Paul B. BS 1980 F1  
1806 Cedarhills; Jefferson City MO  
651040000  
Union Electric; P O Box; St Louis MO  
631660000
- Bishop, Ralph BS 1950 F1  
P O Box 415; Spotsylvania VA 225530000  
U S FAA; 800 Independence Ave NW;  
Washington DC Elec Engr
- Bishop, William W. BS 1948 F1  
Deceased
- Biven, Michael L. BS 1978 F1  
Rt 1; Mexico MO 652650000
- Black, David P. BS 1968 F1  
2633 East 5th St; Joplin MO 648010000  
Westinghouse;
- Black, Scott Edwin BS 1981 F1  
337 Van Preter; Wood River IL  
620950000  
McDonnell Douglas; PO Box 516; St  
Louis MO 631660000 Assoc Engr
- Black, William R. BS 1979 F1  
205 5th St; fond du Lac WI 549350000  
Giddings & Lewis; P O Box 590; fond Du  
Lac WI 549350000 Elec Engr
- Blackslock, Robert S. BS 1950 F1  
117 Brookfield Rd; N Syracuse NY  
132120000  
General Electric;
- Blackwell, William C. BS 1953 F1  
439 Birch Ln; Richardson TX 750810000  
Rockwell Intl-Collins Radio; 3200 E  
Renner Rd 401-125; Richardson TX  
750810000  
Data Communication System Engr
- Blaha, Ronald E. BS 1973 F1  
458 Birchwood; Garland TX 750410000  
TX Instruments; 13500 N Central Expy;  
Dallas TX 752220000 Des Engr
- Blaine, John C. BS 1950 F1  
R R 1; Bealsville OH 437160000  
Olin Corp; P O Box 164; Hannibal OH  
439310000 Supt of Maintenance
- Blair, Norman D. BS 1941 F1, ELEC E 1972  
42 Essex Dr The Commons; Mendham NJ  
079450000  
AT&T; 295 N Maple Ave; Basking Ridge  
NJ 079200000 Director-Central Office
- Blake, Dennis W. BS 1979 F1  
13621 N 21st Dr; Phoenix AZ 850290000  
Sperry Rand-Sperry Flight Sys; P O Box  
21111; Phoenix AZ 850360000  
Elec Engr
- Bialock, Alonzo B. BS 1972 F1  
4112 S Pleasant; Independence MO  
640550000  
Campbell Design Group; Manager
- Blankenhorn, Ronald BS 1982 F1  
2333 Yorktowne; LaPlace LA 700680000  
Shell Oil; Horco Hfg PO Box 10; Norco  
LA 700790000 Engr
- Blankenmeister, Erwin G. BS 1949 F1  
3310 Princess Ln; Dallas TX 752290000  
Burdick Corp; 3301 Gardenbrook; Dallas  
TX 752340000 Sr Sales Exec
- Blankenship, James D. BS 1949 F1  
3049 Colony Crossing Dr; Charlotte NC  
282110000  
IBM; 37th Fl Dept 60A NCGNB Bldg;  
Charlotte NC 282600000 Lab Dir
- Blankenship, William J. BS 1971 F1  
8318 Dawn Dr; Jonesboro GA 302360000  
Owens-Corning Fiberglas;
- Blanton, Larry Glenn BS 1981 F1  
1449 N Arbogast #C; Griffith IN  
463190000  
Northern Indiana Pub Serv Co; 5265  
Hohman Ave; Hammond IN 463200000  
Substation Engr
- Blase, Russell W. BS 1962 F1  
4925 Sherborne; St Louis MO 631280000  
Celco Industries; 2801 Hamilton; St  
Louis MO 631200000 Engr & Sales Mgr
- Blattel, Raymond BS 1971 F1  
2360 Jardine Dr; Oxnard CA 930300000  
U S Navy; Code N353-Missile Ctr; Pt  
Mugu CA 930420000
- Bledsoe, Jeffrey P. MS 1982 F1  
115 Old Brock Rd; Weatherford TX  
760860000
- Blizewski, Brent BS 1972 F1, BS 1973 M1  
Rt 4 Chambers Ln; Mt Vernon IL  
628640000  
General Fire; Hwy 460E Box 1029; Mt  
Vernon IL 628640000 Sr Elec Engr
- Block, Duncan G. BS 1957 F1  
8319 Hale Rd; Hixson IN 37430000  
Voyager Enterprises, Inc; President
- Block, Harold S. BS 1944 F1  
6412 Ruffin Road; Chevy Chase MD  
200150000  
U S Army;  
Asst Chief of Staff for Intel
- Block, Marilyn J. BS 1942 F1  
6412 Ruffin Road; Chevy Chase MD  
208150000  
Retired
- Blount, Robert L. BS 1957 F1  
1423 Saxony; Houston TX 770580000  
NASA Johnson Space Ctr;  
Asst Mgr-Payload Safety
- Blumberg, Leslie BS 1962 F1, MS 1966 F1  
11 Oak Meadow Tr; Pittsford NY  
145340000  
Itak Corp; 1001 Jefferson Blvd;  
Rochester NY 146030000  
Prod Planning Mgr
- Blumfelder, William O. BS 1966 F1  
4304 Metarus Dr; Florissant MO  
630330000  
Emerson Electric; 8100 W Florissant;  
St Louis MO 631360000  
Lab Mgr Test Equip Dev
- Boaz, L. Richard BS 1948 F1  
2819 Bedford; Burlington NC 272150000  
General Electric; PO Box 489; Mobane  
NC 273020000
- Bodenhamer, Steven D. BS 1975 F1  
11 Meadow Crest; Viburnum MO 655660000  
St Joe Minerals Corp; P O Box 10;  
Viburnum MO 655660000  
Maintenance Coordinator

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Bodicky, Andrew L. BS 1951 F1  
 2101 Parkton Way; Barnhart MO  
 630120000  
 McDonnell Douglas;  
 Boeller, Emery L. BS 1948 F1  
 Deceased  
 Boevingloh, Jeffrey J. BS 1971 F1  
 15135 Appalachian Trail; Chesterfield  
 MO 63070020  
 McDonnell Douglas; P O Box 516; St  
 Louis MO 631660000 Programmer  
 Bogantes, Marco A. BS 1947 F1  
 Current Address Needed  
 Bogard, Joseph H. BS 1964 F1  
 4648 American River Dr; Sacramento CA  
 958250000  
 IBM;  
 Bogush, Alfred J. Jr. BS 1955 F1  
 7600 Ramada Ave SE; Huntsville AL  
 358020000  
 New Technology Inc; Engr  
 Bohley, Thomas K. BS 1961 F1, MS 1966 F1  
 1931 Payton Cir; Colorado Springs CO  
 809150000  
 Hewlett-Packard; Dev Engr  
 Bohmer, Michael R. BS 1973 F1  
 615 St Jovite; St Charles MO 633010000  
 Emerson Electric; 9797 Reavis Rd; St  
 Louis MO 631320000 Prod Mgr-Gas Prod  
 Bohmeyer, Stephen P. BS 1970 F1  
 17 Trobridge Rt 14; Columbia MO  
 652020000  
 3M Co; 5400 Rt B; Columbia MO  
 652010000 Process Engr  
 Boillot, Charles R. BS 1966 F1  
 2798 N Jongkind Park Rd; La Porte IN  
 463500000  
 Northern Indiana Pub Serv Co; Franklin  
 Square; Michigan City IN 463600000  
 Div Supv-Power Applications  
 Boje, George J. Jr. BS 1950 F1  
 9531 Horton; Overland Park KS  
 662070000  
 Self Employed; P O Box 7274; Overland  
 Park KS 662070000 Mfg Rep  
 Bolanovich, Peter BS 1948 F1  
 Deceased  
 Boling, Harry O. III BS 1964 F1  
 2018 Francis; Garland TX 750420000  
 E-Systems; Sr Specialist  
 Bollam, James R. Jr. BS 1972 F1  
 6861 Parc Charlene Dr; Florissant MO  
 630330000  
 Kenneth Bolk & Assoc; Elec Engr  
 Bollinger, Dwight A. BS 1969 F1  
 720 Fawn Ct; Mt Zion IL 625490000  
 PPG Industries; Proj Engr  
 Boman, Thomas M. BS 1979 F1  
 9746 Saddlebrook; St Louis MO  
 631260000  
 Bombach, Mark Anthony BS 1981 F1,  
 MS 1983 F1  
 Route 1 Box 166; Cuba MO 65453  
 Bondi, James O. BS 1971 F1, MS 1972 F1,  
 PhD 1974 F1  
 10231 Echo Ridge Ct; Dallas TX  
 752430000  
 TX Instruments; P O Box 226015; Dallas  
 TX 752660000 Computer Sys Engr  
 Bondurant, David W. BS 1971 F1  
 9285 Garrison Way Box F; Eden Prairie  
 MN 553440000  
 Honeywell; 12001 Hwy 55; Plymouth MN  
 554410000 Mgr Systems Applications  
 Bonnot, Andrew W. BS 1982 F1  
 541 Del Medio #323; Mountain View CA  
 940400000  
 Teledyne NEC; P O Box 10007; Palo Alto  
 CA 943030829 Engineer  
 Bono, Thomas L. Sr. BS 1968 F1  
 P O Box 245; Allentown PA 180010000  
 Bono Inc;  
 Book, William T. BS 1935 F1  
 332 Fairway; Kirkwood MO 631220000  
 Retired  
 Boos, Guy H. BS 1949 F1  
 319 Collinwood Dr; Oakhill WV  
 259010000  
 Retired  
 Borchardt, Joseph G. BS 1971 F1  
 14568 Gatemont; Chesterfield MO  
 630170000  
 AT&T-Southwestern Bell; 14 S 4th St,  
 Rm B-10; St Louis MO 631020000  
 Staff Manager  
 Borcherding, Donald A. Jr. BS 1975 F1  
 78 Dorchester Rd; Collegeville PA  
 194260000  
 Control Data Corp; 10323 W Reno;  
 Oklahoma City OK 731570000  
 Sr Applications Engr  
 Borcherding, Robert I. BS 1977 F1  
 5370 Forest Crk Dr; Hazelwood MO  
 630420000  
 McDonnell Douglas; P O Box 516; St  
 Louis MO 631660000 Elec Engr  
 Borchers, Raymond W. BS 1933 F1  
 7095 E Hillf Ave; Denver CO 802240000  
 Retired  
 Borger, Robert M. BS 1972 F1  
 4713 Warnock; Granite City IL  
 620400000  
 Potter Electric; P O Box 14138; St  
 Louis MO 631030000  
 Louis MO 631030000  
 Borgini, Fred BS 1959 F1  
 452 Gladstone Ave; Haddonfield NJ  
 080330000  
 RCA; Principal Mbr of Eng Staff  
 Borgman, Charles R. BS 1966 F1  
 8525 Princess Jeanne, NE; Albuquerque  
 NM 871200000  
 AT&T-Sandia Labs; P O Box 5800;  
 Albuquerque NM 871150000  
 Technical Staff Member  
 Boring, William D. MS 1969 F1  
 980 Saddle; Florissant MO 630330000  
 McDonnell Douglas; P O Box 426; St  
 Charles MO 633010000  
 Program Mgr-EW Sys  
 Borowiak, Thomas G. BS 1975 F1  
 765 Claymont; Ste Genevieve MO  
 636700000  
 Citizens Electric; 150 Merchant St;  
 Ste Genevieve MO 636700000  
 Supv Elec Engr  
 Borowitz, Jerro B. BS 1967 F1  
 2285 Fairplain Ave; Benton Harbor MI  
 490220000  
 Natl Standard Co;  
 Boschert, Robert J. BS 1958 F1  
 16310 Shannon Rd; Los Gatos CA  
 950300000  
 Consultant  
 Boshears, Johnny H. BS 1982 F1  
 3635 Butlerfield Ln; Joplin MO  
 648010000  
 Empire Elec; Engr  
 Boswell, Paul B. BS 1948 F1  
 145 Partridge Rd; Pittsfield MA  
 012010000  
 General Electric; 100 Plastics Ave;  
 Pittsfield MA 012010000  
 Consult Components Engr  
 Boswell, Robert F. BS 1948 F1  
 Current Address Needed  
 Bolt, Max E. MS 1971 F1  
 4 Brixworth; Florissant MO 630330000  
 McDonnell Douglas; P O Box 516; St  
 Louis MO 631660000  
 Section Chief Electronics  
 Boulson, Charles E. BS 1939 F1, ELEC  
 E 1971  
 P O Box 3; Marshfield MO 657060000  
 Retired  
 Bounds, Donald R. BS 1963 F1  
 1561 Candish Ln; Chesterfield MO  
 630170000  
 Monsanto; Vice Pres & Dir of Engr



Bourne, Donald W. BS 1969 F1  
2319 East Royal Ct; St Louis MO  
631310000  
McCarthy Bros Co; 3505 Frontage Rd  
Suite 300; Tampa FL 336070000  
Vice Pres-Southeastern Reg

Bourner, Robert E. Jr. BS 1969 F1  
Box 651; Silverdale WA 983830000  
U S Navy; Royal Yacht-Puget Sound;  
Bremerton WA 983100000 Engr

Boutin, Charles R. BS 1949 F1  
7374 S Monaco Street; Englewood CO  
801120000  
Retired

Bowden, Bruce Curtis BS 1982 F1  
4339 Pont Drive; Bridgeton MO  
630440000  
Intel Corp; Engr

Bowen, Jesse W. Jr. BS 1949 F1  
Rt 1 Box 16; Dent MN 565280000  
Retired

Bowles, Kenneth W. BS 1966 F1  
14 Georgetown Ct; Union MO 630874000  
Self Employed; Pastor/Teacher

Bowles, Raymond W. BS 1950 F1  
6311 Tall Oaks Drive; Mentor OH  
440600000

Bowlin, Gary W. BS 1977 F1  
2901 Monsees Dr; Sedalia MO 653010000  
Broderick & Bascom Rope Co;  
Plant Engr

Bowlin, John D. BS 1974 F1  
2517 Dalbo; Duarte CA 910100000  
General Electric; Applications Engr

Bowman, Charles W. BS 1969 F1  
2504 Brennan Dr; Plano TX 750740000  
TX Instruments;  
Sr Member of Tech Staff

Bowman, Samuel S. III BS 1957 F1  
1404 E University Dr; Auburn AL  
368300000  
J B Thomas Co; 1902 Church St;  
Nashville TN 372030000 Mgr

Boxdorfer, Robert L. BS 1959 F1  
354/ Halfiday; St Louis MO 631180000  
City of St Louis, MO; 4971 Oakland  
Ave; St Louis MO 631100000  
Mgr-Fire Alarm

Boyd, Charles L. BS 1951 F1  
1907 Seven Oaks Dr; Kingwood TX  
773390000  
Exxon; 213 Bonmar; Houston TX  
770600000 Constr Superintendent

Boyd, Louis J. BS 1968 F1  
629 North 30th St; Phoenix AZ  
850080000  
Mountain Bell; Engr

Bozarth, Bruce A. BS 1969 F1  
P O Box 304 Plateau Drive;  
Mifflinville PA 186310000  
PA Power & Light Co; Proj Engr

Bracher, Donald D. BS 1970 F1  
Deceased

Braddock, Paul F. BS 1978 F1  
62 Roosevelt St; St Charles IL  
601740000  
Furnas Electric; 1000 McKee St;  
Batavia IL 605100000  
Sales Application Engr

Bradshaw, John J. BS 1979 F1  
Current Address Needed

Bradway, Brian J. BS 1981 F1  
1819 Elizabeth; Wichita Falls TX  
763010000  
Halliburton-Welox; PO Box 955; Wichita  
Falls TX 76301 Field Service Engr

Brady, Harold F. BS 1961 F1, ELEC E 1976  
1949 Pepperrell Dr; St Louis MO  
631460000  
Southwestern Bell; 112 N Fourth St; St  
Louis MO 631020000 Marketing Mgr

Braeutigam, Raymond L. BS 1933 F1  
Deceased

Brake, James Cecil BS 1982 F1  
858 Silver Pines; Houston TX 770620000  
IBM; Design Engr

Brand, John R. BS 1968 F1  
803 Newell Dr; Apple Valley MN  
551240000  
Magnetic Peripherals; 7801 Computer  
Ave-So; Bloomington MN 554350000  
Mgr Advanced Channel Dev

Brand, Robert E. BS 1978 F1  
112 Meyer Rd; Wentzville MO 633850000  
McDonnell Douglas; P O Box 516; St  
Louis MO 631660000 Assoc Engr

Brandon, David F. BS 1976 F1, MS 1978 F1  
321 SW 6th St; Newton KS 671140000  
Deere & Co;

Brandt, Edward John BS 1983 F1  
813A S Morrison; Collinsville IL  
622340000  
Jaket Motors Inc; 400 W Broadway;  
Highland IL 622490000  
Application Engr

Brandt, Robert R. BS 1976 F1  
109 Great Plains; Lafayette LA  
705060000  
Automation Communications Engr;  
Staff Engr

Branson, Eugene A. BS 1965 F1  
9059 Billow Row; Columbia MD 210450000  
Schlumberger-Sangamo Weston; John Beck  
Docking Rd; Clayton GA 305250000  
Mgr Purchasing

Brase, Deborah Diane (Nee Brown, Deborah  
Diane) BS 1981 F1  
4721 Hawkhaven; Austin TX 787270000  
IBM; 11400 Burnett Rd; Austin TX  
787270000 Test Engr

Brashear, William D. BS 1965 F1  
Sustak; APO San Francisco CA 963010000  
U S Dept of Defense;

Bratton, James S. BS 1969 F1  
8740 Westheimer #23; Houston TX  
770630000  
Eaton Corp-Cutler-Hammer; Montrose  
Blvd; Houston TX

Braun, David G. BS 1979 F1  
5030 Shrewsbury Ave; St Louis MO  
631190000  
Union Electric; 1901 Gratiot St; St  
Louis MO 631660000 Engr Asst

Braun, James L. BS 1967 F1  
358 Sorrento; Manchester MO 630110000  
Westinghouse; 1215 W 12th St; Kansas  
City MO 641010000 Field Serv Engr

Braun, Michael John BS 1983 F1  
12541d Western Cape; St Louis MO 63141

Braun, Robert J. BS 1978 F1  
RR 1 Box 378; Freiburg IL 622430000  
Monsanto; P O Box 8; St Peters MO  
633760000 Proj Engr

Bray, Robert W. Jr. BS 1966 F1  
180 Repesado Dr; La Habra CA 906310000

Breazeale, Paul H. BS 1952 F1  
Deceased

Breckner, Chester N. BS 1949 F1  
Current Address Needed

Bredhoeft, Melvern L. BS 1975 F1  
1000 Southland; Ft Worth TX 761040000  
General Dynamics; P O Box 748; Ft  
Worth TX 761010000  
Sr Aerosystems Engr

Bredemann, Michael V. BS 1980 F1,  
BS 1981 D2  
4321 Montgomery Blvd NE A 446;  
Albuquerque NM 871040000

Bredenkamp, Ronald C. BS 1979 F1  
3056 Willowood; Bettendorf IA  
527220000  
Alcoa; P O Box 3567; Davenport IA  
528080000 Elec Engr

Breeden, Jon C. BS 1972 F1  
811 Bordeaux Court; Manchester MO  
630110000  
U S Air Force; Lt Captain

Brehe, Harold C. BS 1949 F1  
4671 Mt Armet Dr; San Diego CA  
921170000  
General Dynamics; Engr Specialists

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Bright, Alan R. BS 1980 F1  
51 Hill Dr; Kirkwood MO 631220000  
AI&T-Bell Labs;

Breit, Stephen M. BS 1971 F1  
Rt 2 Box 163-J; Bartlesville OK  
740030000  
IRW Inc; P O Box 1181; Bartlesville OK  
740030000 Dev Eng/Advance Eng

Bremer, Terry W. BS 1981 F1  
1592 Barkwood; Florissant MO 630310000  
Union Electric; Asst Engr

Brendel, Gerald S. BS 1973 F1  
821 S Sappington; St Louis MO  
631260000  
Brendel Ins;

Brendemihl, David E. BS 1977 F1  
P O Box 759; Lewisville TX 750670000  
TX Instruments;

Brennan, Marshall R. BS 1964 F1  
1106 Wrought Iron Ln; Manchester MO  
630110000  
McDonnell Douglas; P O Box 516; St  
Louis MO 631660000 Lead Engr

Brennan, Robert A. BS 1977 D7, BS 1977 F1  
1311 NW 11 St; Andrews TX 797140000  
Amoco; 801 N Main; Andrews TX  
797140000 Engr

Brennan, Ronald D. BS 1957 F1  
714 Castlewood Ave; Fulton MO  
652510000

Brennecke, William E. BS 1958 F1  
3920 Wilmington; St Louis MO 631160000  
MO Public Serv Co; P O Box 70;  
Lexington MO 640670000 Dist Mgr

Brennensuhl, Charles H. BS 1973 F1,  
BS 1978 D7  
Deceased

Brenner, George J. Jr. BS 1962 F1  
557 N Woodlawn; St Louis MO 631220000  
Emerson Electric; 8000 W Florissant Bx  
4100; St Louis MO 631360000  
Engr Spec

Bretthauer, Raymond C. Jr. BS 1962 F1  
Current Address Needed

Breville, David A. BS 1968 F1  
5379 Five Fingers Way; Columbia MD  
210450000  
Hewlett-Packard; Field Engr

Brewster, Robert W. BS 1961 F1  
314 Crestwood Dr; Tullahoma TN  
373880000  
Union Carbide; Oak Ridge Gasous Def  
Pl; Oak Ridge TN 378300000

Brewton, Wilbert R. Jr. BS 1980 F1  
1942 Deepark #142; Fullerton CA  
926310000  
Chevron Companies; P O Box 3495; San  
Francisco CA 941190000 Des Engr

Brez, Ray C. Jr. BS 1966 F1  
4058 Yama St; Simi Valley CA 930650000  
McDonnell Douglas; Engr

Bridegroom, William E. BS 1964 F1  
625 Carrico Rd; Florissant MO  
630340000  
LCORP-St Louis Inc; 2550 Harley Dr;  
Maryland Hts MO 630430000 Sales Mgr

Bridge, William F. BS 1972 F1  
Current Address Needed

Bridges, Harry B. BS 1939 F1  
6628 Finchler Rd; Indianapolis IN  
462500000  
Retired

Bridges, Thomas L. BS 1979 F1  
25 Dogwood; St Peters MO 633760000  
McDonnell Douglas; 2600 N Third St; St  
Charles MO 633010000 Design Engr

Brielmaier, Paul A. BS 1943 F1  
3966 RegalWay Dr; St Louis MO  
631290000  
Union Electric; P O Box 459; St Louis  
MO 631660000 Elec Engr

Briggs, Paul C. BS 1974 F1  
1215 Waterbury Ln; Roselle IL  
601720000  
Fola Electric Co; Electrical Engr

Brinker, Clark D. BS 1969 F1  
3030 Greenridge #17; Houston TX 77027  
Dashfield Corp; 1300 Underwood Rd Bx  
1300; Deer Park TX 775360000  
Proj Engr

Brinkman, John E. BS 1942 F1  
Star Rt; Athelstane WI 541040000  
Allis-Chalmers; P O Box 512; Milwaukee  
WI 532010000

Brinkmann, Charles E. BS 1950 F1  
2101 Cedar Hill Rd; Jefferson City MO  
651010000  
MO Power & Light; 101 Madison;  
Jefferson City MO 651010000  
Vice Pres-Operations

Briscoe, Robert E. BS 1959 F1  
2501 S Ohio; Sedalia MO 653010000  
MO Public Serv Co; 400 S Ohio; Sedalia  
MO 653010000 Meter Engr

Brittingham, Harry H. BS 1928 F1  
Deceased

Brixey, Harley D. BS 1961 F1, MS 1963 F1  
3291 Taylor; Bridgeton MO 630440000  
McDonnell Douglas; P O Box 516; St  
Louis MO 631660000 Sr Engr

Brock, Jordan B. BS 1973 F1  
2719 Ashby Rd; St Louis MO 631140000

Brockmeyer, James D. BS 1972 F1  
1657A S Pine St; Blytheville AR  
723150000  
U S Air Force;

Bronson, John L. BS 1959 F1  
1605 East Wichita; Mc Alester OK  
745010000  
Central & SW-Public Ser of OK;  
Eastern Div Operations Mgr

Brooks, Howard W. BS 1964 F1  
Current Address Needed

Brooks, Thomas W. BS 1979 F1  
1095 Detroit; Jacksonville FL  
322050000

Brophy, Steven Robert BS 1982 F1  
3128 B Alpen Road Ct; St Louis MO  
631250000  
Union Electric; Assistant Engr

Brose, Robert L. BS 1972 F1  
218 Stonely View Ln; St Louis MO  
631140000  
Technisonic Studios Inc; 1201 S  
Brentwood; St Louis MO 631170000  
Chief Engr

Brouwer, Jerry W.T. BS 1968 F1  
1956 E Des Moines St; Mesa AZ  
852030000  
City of Mesa, AZ; P O Box 1466; Mesa  
AZ 852010000 Elec Sys Engr

Brown, B. Alan BS 1964 F1  
L D Schreiber Cheese; 127 W Limestone  
Bx 557; Carthage MO 648360000  
Maint Supv

Brown, Bradley A. BS 1980 F1, BS 1980 D5  
7716 Crisp; Kansas City MO 641380000  
Bendix; P O Box 1159; Kansas City MO  
641410000 Engr

Brown, Deborah Diane BS 1981 F1  
See Brase, Deborah Diane

Brown, Donald R. BS 1978 F1  
408 N Joplin Pl #2; Russellville AR  
728010000  
AR Power & Light; P O Box 551; Little  
Rock AR 722030000 Elec Engr

Brown, Douglas A. BS 1971 F1  
367 Drummond Dr; Bourbonnais IL  
609140000  
Commonwealth Edison; 1 First Natl  
Plaza; Chicago IL 606700000  
Supervisory Engr

Brown, Garry S. BS 1967 F1  
3709 Camino DeLaSierra NE; Albuquerque  
NM 871110000  
AT&T-Sandia Labs; P O Box 5800;  
Albuquerque NM 871150000 Supv

Brown, James L. BS 1963 F1  
R R 1; Toddville IA 523410000

- Brown, Jerry K. BS 1969 F1  
 RL 1 Box 7; Callao IA 635340000  
 Rockwell Intl-Collins Radio; 400  
 Collins Rd NE; Cedar Rapids IA  
 524020000 Elec Engr Scientist
- Brown, Joe R. BS 1968 F1  
 1127 S Garrison Box 552; Carthage MO  
 648360000  
 Motor Rentals Inc; P O Box 756;  
 Carthage MO 648360000 Vice Pres
- Brown, Lyndell R. BS 1973 F1  
 17920 Nearbrook St; Canyon Country CA  
 913510000  
 Hughes Aircraft; Sr Staff Engr
- Brown, Phillip O. BS 1957 F1, MS 1960 F1,  
 ELEC E 1977  
 13405 New Halls Ferry Rd; Florissant  
 MO 630330000  
 McDonnell Douglas; P O Box 516; St  
 Louis MO 631600000  
 Chief Engr-Electronics
- Brown, Richard Alan BS 1983 F1  
 2729 Mcknight Rd; Rock Hill MO 63119
- Brown, Richard R. BS 1961 F1  
 515 Silver Springs Cir; Colorado  
 Springs CO 809190000  
 Hewlett-Packard; Elec Engr
- Brown, Ricky J. BS 1975 F1  
 RR 1 Box 296B; Ellis Grove IL  
 622410000  
 Cora Coal; RR# 1; Cora IL Elec Engr
- Brown, Robert A. BS 1970 F1, MS 1975 M1  
 Rt 5 Box 140V; Joplin MO 648010000  
 Eagle-Picher Industries Inc; C &  
 Porter St; Joplin MO 648010000
- Brown, Robert G. Jr. BS 1970 F1  
 815 Naomi; Florissant MO 630330000
- Brown, Robert L. BS 1958 F1  
 3625 S Spring; St Louis MO 631160000  
 Vm Iao & Assoc; 2357 59th St; St Louis  
 MO 631100000 Assoc
- Brown, Robert L. BS 1970 F1  
 3625 S Spring; St Louis MO 631160000  
 U S Navy; U S Naval Reserve; LTJ9
- Brown, Robert S. BS 1965 F1  
 3045 Rockwood Trl; St Charles MO  
 633010000
- Brown, Ronald D. BS 1970 F1  
 Caterpillar Tractor Co; 100 NE Adams;  
 Peoria IL 616020000
- Brown, Thomas E. BS 1968 F1  
 Rt 1 Box 135A; Callao VA 224350000  
 U S Navy; Air Test Facilities; Pax  
 River MD
- Brown, William R. BS 1948 F1  
 730 E Elm, 1; Springfield MO 658060000
- Browning, Billy R. BS 1950 F1  
 30 Wauneta Pl; Hannibal MO 634010000  
 Northeast MO Elec Power Coop; Box 191;  
 Palmyra MO 634610000 Elec Engr
- Browning, Phil A. BS 1948 F1  
 Rt 2 Box 300; Logansport LA 710490000  
 Shell Oil; P O Box 60124; New Orleans  
 LA 701600000  
 Operations Superintendent
- Brubaker, Maurice E. BS 1965 F1  
 23 Crown Manor Dr; Chesterfield MO  
 630170000  
 Drazen-Brubaker & Assoc; P O Box  
 11886; St Louis MO 630150000  
 Vice President
- Bruce, Joe J. BS 1981 F1  
 7017 Greenview Circle N; Ft Worth TX  
 761120000  
 Motorola; Engr Elect
- Bruce, Randy O. BS 1978 F1  
 Current Address Needed
- Brueggemann, Richard P. BS 1961 F1,  
 MS 1964 F1, PhD 1972 F1  
 6787 Blossom View Dr; Florissant MO  
 630330000  
 McDonnell Aircraft Co; Sr Staff Engr
- Bruemmer, David M. BS 1980 F1  
 4597 Wabash; St Louis MO 631090000  
 IL Power Co; 500 S 27th St; Decatur IL  
 625250000 Engr
- Brumback, Brian D. BS 1978 F1, MS 1979 F1  
 1425 Augusta; Ft Worth TX 761260000  
 General Dynamics; P O Box 748; Ft  
 Worth TX 761010000 Sr Aero Engr
- Bruene, Peter A. BS 1965 F1  
 1431 Bluebird Terr; Brentwood MO  
 631440000  
 Malcolm A Miller Inc; P O Box 7207;  
 Shawnee Mission KS 662070000  
 Elec Designer
- Brunkhorst, Lloyd E. BS 1961 F1,  
 MS 1963 F1  
 1571 Mason Knoll Rd; St Louis MO  
 631310000  
 Brown Group Inc; 8400 Maryland Ave;  
 Clayton MO 631050000  
 Dir-Research & Engineering
- Brunnenmeyer, Lester R. BS 1950 F1  
 1000 E Loyola; Tempe AZ 852820000  
 The Garrett Corp; 402 S 36th St;  
 Phoenix AZ 850340000 Asst Proj Engr
- Brunner, Gary D. BS 1965 F1, MS 1967 F1  
 5716 W Ponsettia Dr; Glendale AZ  
 853040000  
 Goodyear; Box 85; Litchfield Park AZ  
 853400000 Sr Engr Spec
- Bruns, Gregory A. BS 1961 F1  
 4612 Bruce Ave; Minneapolis MN  
 554240000  
 Honeywell; Marketing Mgr
- Bruns, Martin L. BS 1963 F1  
 1205 Roney St; Hiawatha IA 522330000  
 Rockwell Intl-Collins Radio; 5200 C  
 Ave NE; Cedar Rapids IA 524020000  
 Prod Mgr
- Brunson, Vernon L. BS 1950 F1  
 P O Box AA; Baldwin Park CA 917060000  
 Rockwell Intl; 2770 E Carson; Lakewood  
 CA 907120000 Sr Research Engr
- Brunts, Randall T. BS 1981 F1  
 3030 Berkeley; Kokomo IN 469020000  
 General Motors-Detroit; Highway 31;  
 Kokomo IN 469020000 Engr
- Bryan, David O. BS 1971 F1  
 8546 Melrose; Overland Park KS  
 662140000  
 General Motors; Plant Engr Dept Assem  
 Div; Kansas City KS Assoc Engr
- Bryant, Danny L. BS 1980 F1  
 952 Lombardy Dr; Plano TX 750230000  
 TX Instruments; 13500 N Central Expwy;  
 Dallas TX 752200000 Elec Engr
- Bryant, David A. BS 1970 F1  
 6709 Tower Dr #204; Alexandria VA  
 223060000  
 U S Navy; U S Naval Sea Sys Comm; d  
 Arlington VA Proj Engr
- Bryant, James R. BS 1947 F1  
 16022 Via Media; San Lorenzo CA  
 945800000  
 Pacific Gas & Elec; 245 Market St; San  
 Francisco CA
- Bryant, Richard O. BS 1970 F1  
 27 Bartlett; Leominster MA 014530000  
 Simplex Time Recorder Co; 35 S  
 Lincoln; Gardner MA 014400000  
 Systems Support Engr
- Buback, Craig S. BS 1972 F1  
 1480 Gettysburg Landing; St Charles MO  
 633010000  
 McDonnell Douglas; P O Box 516; St  
 Louis MO 631660000 Elec Engr
- Buchmann, Donald P. BS 1982 F1  
 10711 Forest Path; St Louis MO  
 631280000  
 Emerson Electric; Elec Engr
- Buchmann, Raymond L. BS 1974 F1  
 11425 W 1st; Wichita KS 672120000  
 Boeing; 3801 S Oliver; Wichita KS  
 672100000 Sr Specialist Engr

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Buchmeier, Frank A. Jr. BS 1966 FI,  
MS 1974 M1  
5050 Kennelwood Dr; St Louis MO  
631290000  
Union Electric; P O Box 149 Mail Code  
601; St Louis MO 631660000  
Supv Engr-Power Oper

Buckowitz, Arthur M. BS 1977 F1  
2485 Lindsay Ln; Florissant MO  
630310000  
Union Electric;

Buckrod, Gary J. BS 1962 F1  
315 Chevy Chase Dr; Belleville IL  
622230000  
Union Electric; 1901 Gratiot St; St  
Louis MO 631660000 Sr Engr-Trans

Buczowski, Kim Jolene (Nee Root, Kim  
Jolene) BS 1981 F1  
2125 S Old Manor; Wichita KS 672070000  
Boeing;

Budd, Vincent J. BS 1971 F1  
58 Wallkill Ave; Middletown NY  
109400000  
Orange & Rockland Utilities; 75 West  
Rt 59; Spring Valley NY 109770000  
Mgr-Sys Oper

Budt, William J. Jr. BS 1968 F1  
Current Address Needed

Buechlein, Ronald W. Jr. BS 1980 F1  
8644 Burton; St Louis MO 631140000  
McDonnell Douglas; P O Box 516; St  
Louis MO 631660000 Assoc Engr

Buehler, Joseph A. BS 1979 F1  
5807 Runnymede Ct; Imperial MO  
630520000  
Booker Associates Inc; 1139 Olive St;  
St Louis MO 631010000  
Engr-Mech & Elec

Buel, Charles A. BS 1973 F1  
4220 Aspen Hills Dr; Bettendorf IA  
527220000  
Alcoa; P O Box 3567; Davenport IA  
528080000

Buente, Robert W. MS 1974 F1  
14730 Northam S; La Mirada CA  
906380000

Bull, Geoffrey C. MS 1977 F1  
RR 4 188 Henley Rd; Palm Bay FL  
329050000  
Harris Corp; P O Box 430; Palm Bay FL  
329100000 Sr Engr

Bullinger, Joe David BS 1981 F1  
Rural Route 2; Jackson MO 63755  
Procter & Gamble-Charmin; PO Box 400;  
Cape Girardeau MO 637010000

Bullock, David L. BS 1976 F1  
1301 N 13th; St Joseph MO 645010000  
Glenn Hendrix Constr Co; Carpenter

Bumpus, Frank J. BS 1949 F1  
Current Address Needed

Bunney, Earl BS 1956 F1  
138 Brookside St; Lehigh Acres FL  
339360000  
Retired

Burbank, Edward J. BS 1969 F1  
951 E Whitefeather; Pinconning MI  
486500000  
Continental Telephone; 4399 N Hurson  
Rd; Pinconning MI 486500000 Engr

Burbridge, Thomas E. BS 1979 F1,  
MS 1981 F1  
1065 Jackson; Florissant MO 630310000  
McDonnell Douglas; P O Box 516; St  
Louis MO 631660000 Engr

Burch, Robert D. BS 1966 F1  
143 Schneiderman Dr; Akron OH  
443190000  
Goodyear; 1210 Massillion Rd; Akron OH  
443150000 Dev Engr

Burchfield, Carolyn S. BS 1974 F1  
See Adkins, Carolyn S.

Burford, Harry B. BS 1979 F1  
6514 Wendell; Wichita KS 672190000  
NGR Co; 3718 N Rock Rd-MS #6; Wichita  
KS 672260000 Des Engr

Burger, Robert W. BS 1982 F1  
1447 Cove Lane; St Louis MO 631380000

Burger, Thomas C. BS 1950 F1  
9219 E Kayenta; Tucson AZ 857440000  
Retired

Burgett, Warren J. BS 1978 F1  
6713 East 134th Terr; Grandview MO  
640300000  
Bendix; Engr

Burkemper, Larry J. BS 1969 F1  
Rt 1 Box 125; Clayton IL 623240000  
Self Employed

Burkemper, Vincent J. BS 1983 F1  
2667 Dougherty Ferry; St Louis MO  
63122

Burkett, Robert A. BS 1969 F1  
72 Bent Oak Tr; Fairport NY 144500000  
Xerox Corp; Xerox Square; Rochester NY  
146440000 Elec Engr

Burkhart, Robert O. BS 1975 F1  
7311 Normandie #B; Hazelwood MO  
630420000

Burlage, Donald W. BS 1961 F1  
4611 Governors Dr; Huntsville Al  
358050000  
U S Army; Pentagon; Washington DC  
203040000 Deputy Director

Burnett, Kenneth J. BS 1952 F1  
Current Address Needed

Burns, Fredrick B. BS 1954 F1  
1768 Poplar Ave; S Milwaukee WI  
531720000  
E Z Painter Corp; 4051 S Iowa Ave;  
Milwaukee WI 532070000 Vice Pres-Res

Burns, Randall K. BS 1969 F1  
5 Sheraton Dr; Hudson NH 030510000  
Sanders Assoc; Principal Engr

Burns, Rubie L. BS 1940 F1  
3370 Clubview Ter; Colorado Springs CO  
809060000  
Retired

Burnworth, Jeffrey A. BS 1976 F1  
55 Country Club Pl; Belleville IL  
622230000  
Basler Electric Co; Rt 143; Highland  
IL 622900000 Junior Elect Engr

Burr, Jack Allen Jr. BS 1982 F1  
633 Claymont Est Dr; St Louis MO  
630110000  
IX Instruments; 11861 Westline Indust  
Dr; St Louis MO 631410000  
Field Sales Engr

Burr, Richard C. BS 1977 F1  
8627 Stonewall Dr; Indianapolis IN  
462310000  
Public Serv Co of IN; 1000 E Main St;  
Plainfield IN 461680000 Systems Engr

Burris, Chester H. BS 1949 F1  
517 W F St; N Little Rock AR 721160000  
Retired

Burris, Terry L. BS 1968 F1  
Current Address Needed

Burrows, Gerald W. BS 1970 F1  
RR 1 Box 324C; Grain Valley MO  
640290000  
Kansas City Power & Light; 1330  
Baltimore; Kansas City MO 641050000  
Asst Supt-Power Disp

Burton, James E. Jr. BS 1979 F1  
885 Flora Ln; Florissant MO 630310000

Busby, John C. III BS 1968 F1  
Current Address Needed

Busby, Melvin L. BS 1964 F1  
12831 Locust St; Kansas City MO  
641450000  
Bendix;

Busch, William C. BS 1937 F1  
4563 Georgian Trail; Rockford IL  
611030000  
Retired

Buschmeyer, Paul D. BS 1978 F1  
33 N Elizabeth; Ferguson MO 631350000  
McDonnell Douglas; P O Box 516; St  
Louis MO 631660000 Engr Technology

Busiek, Allen W. BS 1981 F1  
5118 Westhaven; Arlington TX 760173614  
Gearhart Industries; 9100 B Forum Way  
Dr; Ft Worth TX 761010000  
Electronics Engr

Busiek, Renee Rigby BS 1981 F1  
Requests No Mail

Butler, James L. BS 1965 F1  
406 New Salem Rd; Marshalltown IA  
501580000  
Monsanto-Fisher Controls; 205 S Center  
St; Marshalltown IA 501580000  
Mgr Marketing

Butts, Michael C. BS 1973 F1  
12 Hillisdale Dr; Council Bluffs IA  
515010000  
IA Power & Light; Box 128; Council  
Bluffs IA 515010000 Elec Engr

Buxton, Jan K. MS 1973 F1  
731 Wake Forest Dr; Mtn View CA  
940430000  
Monolithic Memories Inc; 1165 East  
Arques Ave; Sunnyvale CA 940860000  
Software Engr

Byers, Charles A. BS 1962 F1  
Current Address Needed

Byers, Gary F. BS 1979 F1  
PO Box 1485; Green River WY 829350000  
Schlumberger;

Byrd, Herman C. BS 1950 F1  
Deceased

Byrne, James M. BS 1973 F1  
7120 Skillman #2101; Dallas TX  
752310000  
TX Instruments; P O Box 6015 MS 259;  
Dallas TX 752220000 Des Engr

Cable, John W. BS 1969 F1  
12700 Garfield; Kansas City MO  
641460000  
Bendix; P O Box 1159; Kansas City MO  
641410000 Sr Engr

Cage, William F. BS 1978 F1  
P O Box 99; La Center KY 420560000  
Union Carbide; Box 1410; Paducah KY  
420010000 Power Operations Supv

Cain, Herbert BS 1950 F1  
Current Address Needed

Cain, Lawrence Josep BS 1982 F1  
5947 Marwinette; St Louis MO 631160000

Cain, Scott B. BS 1978 F1  
1716 SE East Dr; Bartlesville OK  
740030000  
AAI; 4001 SE Adams Rd; Bartlesville OK  
740030000 Project Engr

Cain, Stephen Joseph BS 1981 F1  
3243 Greenwich; St Charles MO 63301  
Emerson Electric; Design Engineer

Caldwell, Richard J. BS 1970 F1  
7424 180th St; Edmonton, Alb15T2K8  
Canada 21  
Northwestern Utilities Ltd; 10040  
104th St; Edmonton Alb15J253 Canada 21  
Sr Communications Engr

Calhoun, Troy C. BS 1960 F1  
4311 S Lakeport; Sioux City IA  
511060000  
IBP Inc; Vice Pres-Engr Prod

Calhoun, William L. BS 1967 F1  
7 Foxhill Rd; Monticello IL 618560000  
IL Power Co; 500 S 27th; Decatur IL  
625260000  
Supv-Elec Power Plant Constr

Call, Mark G. BS 1977 F1  
6626 Apache Ct; Longmont CO 805010000  
IBM; P O Box 1900; Boulder CO  
803020000 Sr Staff Engr

Callanan, David M. BS 1971 F1  
1188 Bucknell Dr; Monroeville PA  
151460000  
Westinghouse; 700 Braddock; E  
Pittsburgh PA 151120000  
Advanced Engr

Callen, Robert R. BS 1967 F1  
509 N Main; Farber MO 633450000  
Retired

Callisto, Jere L. BS 1964 F1  
20 Cloverleaf; Hanchester MO 630110000  
McDonnell Douglas; P O Box 516; St  
Louis MO 631660000 Lead Engr

Calvin, Paul N. BS 1978 F1  
2410 S Gardenia; Broken Arrow OK  
740120000  
Beckman Instr; Elec Salesman Engr

Cambier, James L. BS 1971 F1  
1205 N James St; Rome NY 134400000  
Par Technology Inc;

Cameron, John D. BS 1967 F1  
4824 Venetian Place NE; St Petersburg  
FL 337030000

Camp, Dennis J. BS 1962 F1  
11708 Babbitt Ave; Granada Hills VA  
913440000  
Hughes Aircraft; Centinela & Teale;  
Culver City CA 902300000  
Supervisor Tech Elec

Camp, Marvin O. BS 1962 F1  
9380 Springfield Dr; Allison Park PA  
151010000  
Alcoa; 1501 Alcoa Bldg; Pittsburgh PA  
152190000 E E Specialist-Rolling

Campanelli, Thomas P. BS 1970 F1  
5 Winslow Dr; Crawfordsville IN  
479330000  
R R Donnelley & Sons; RT 32 W;  
Crawfordsville IN 479330000

Campbell, George E. Jr. BS 1964 F1  
315 W Mission Dr; Chandler AZ  
852240000  
Motorola; 8201 E McDowell Rd;  
Scottsdale AZ 852570000  
Transistor Circuits Design

Campbell, Gerald L. BS 1970 F1  
1 Treehill Ct; Manchester MO 630110000  
Engr Design & Mgtment Inc; 522 Olive  
St; St Louis MO 631010000  
Vice President

Campbell, Lowell G. BS 1956 F1  
Rt 3 Box 70C; St James MO 655900000  
Self Employed

Campbell, Michael R. BS 1973 F1,  
MS 1975 F1  
Current Address Needed

Campbell, Robert E. BS 1952 F1  
2025 Lake Drive; Anderson IN 460120000  
General Motors-Deico Rem;  
Sr Development Engr

Campbell, Thomas C. BS 1968 F1  
Current Address Needed

Canale, Thomas BS 1961 F1  
5106 Harwood Rd; San Jose CA 951240000  
Mohawk Data Sciences; Sr Engr

Canizares, Hugo M. MS 1974 M1, MS 1979 F1  
12823 Strathearn Dr; Creve Coeur MO  
631460000  
AIE Associates; 4534 N Lindbergh #600;  
Bridgeton MO 630400000 Sr Staff Engr

Cannady, Roger L. BS 1968 F1  
372 Evergreen Dr; Holland MI 494230000  
Theritron; National Service Rep

Cantrell, John W. BS 1969 F1  
RFD 5 Box 493; Springfield MO  
658030000  
City of Springfield, MO; 301 E Central  
P O Box 551; Springfield MO 658010000  
Engr

Carl, James R. MS 1968 F1  
16122 Rill Ln; Houston TX 770580000  
Lockheed; 1830 NASA Rd #1; Houston TX  
770580000 Staff Engr

Carl, Louis H. BS 1950 F1  
10140 SE Browning Rd; Evansville IN  
477110000  
Whirlpool Corp; Hwy 41 Plant;  
Evansville IN 477110000  
Product Engineer

Carlson, Leonard C. BS 1952 F1  
Current Address Needed

90 / Alphabetical Listing

- Carlton, Dennis P. BS 1975 F1  
4600 S DeFrame St; Morrison CO  
804650000  
U S FCC; 12477 W Cedar Dr; Denver CO  
802280000 Engr In Charge
- Carmey, Edwin R. BS 1979 F1  
8255 Delmar Ave #2-E; St Louis MO  
631240000  
Emerson Electric;
- Carpenter, Lloyd W. BS 1959 F1  
1675 Gallant Fox Dr; Florissant MO  
630330000  
McDonnell Douglas; P O Box 516; St  
Louis MO 631660000 Branch Chief
- Carpenter, Michael W. BS 1979 F1  
1675 Gallant Fox Dr; Florissant MO  
630330000
- Carr, Ronald S. BS 1976 F1  
Current Address Needed
- Carr, Walter J. Jr. BS 1940 F1  
1460 Jefferson Hts Rd; Pittsburgh PA  
152350000  
Westinghouse; Beulah Rd; Pittsburgh PA  
152350000 Consulting Scientist
- Carr, William A. BS 1961 F1  
Deceased
- Carrizo, Ruben A. BS 1964 F1, MS 1965 F1  
Exxon; Box 889; Caracas Venezuela 74
- Carroll, Ralph Jr. BS 1972 F1  
4551 Monarch Dr; Sierra Vista AZ  
856350000  
U S Air Force; Lt
- Carron, Ben J. BS 1960 F1  
P O Box 3371; Huntsville AL 358100000  
Huntsville, AL City Schools;  
Teacher-Mathematics
- Carron, Mark K. BS 1970 F1  
5 Colchester Dr; Ferguson MO 631350000  
St. Louis County Water Co; 8390 Delmar;  
St Louis MO 631200000  
Distribution System Oper Engr
- Carter, Howard L. BS 1975 F1  
817 E Oak; Lompoc CA 934360000  
U S Air Force; Bldg 11248-HQ Ogden  
ALC; Vandenburg AFB CA 934370000  
Elec Sys Branch Chief
- Carter, James M. BS 1966 F1, MS 1968 D5,  
PhD 1970 D5  
3312 Wilks Pl SW; Huntsville AL  
358050000  
NASA; Marshall Space Flight Center;  
Huntsville AL 358120000  
Assit Space Optics
- Carter, John D. BS 1976 F1  
267 Sun Valley; Beulah ND 585230000  
Stanley Consultants Inc; Stanley Bldg;  
Muscatine IA 527610000  
Sr Instrumentation Engr
- Carter, John H. BS 1965 F1  
Rt 1 Evergreen Ln; Villa Ridge MO  
630890000  
J C Barnard & Assoc Inc; 10121  
Manchester; St Louis MO 631220000  
Telephone Facility
- Carter, Philip J. BS 1964 F1, MS 1967 F1  
South Road; Holmes NY 125310000
- Carter, Richard E. Jr. BS 1964 F1  
Current Address Needed
- Carter, Robert E. BS 1950 F1  
910 Fairway Dr; Columbia MO 652010000
- Carter, Ronald W. BS 1967 F1, MS 1971 F1  
1 Morningside Dr; Conway AR 720320000  
Soundcraft Syst; Sr Engr
- Carter, Ward J. BS 1949 F1  
19 Warren Pl; Charleston WV 253020000  
Ashland Coal; E E Manager
- Carty, Wayne A. BS 1949 F1  
Current Address Needed
- Cary, Stanley E. BS 1969 F1  
Rt 1 Box 49B; Pleasant Hope MO  
657250000  
City of Springfield, MO; 301 E  
Central; Springfield MO 658020000  
Sr Engr-Elec
- Case, Glenn R. PhD 1969 F1  
1194 W Vanderbilt Ct; Sunnyvale CA  
940870000  
Fairchild Industries; 4001 Miranda Av  
MS 30-160; Palo Alto CA 943040000  
Mgr-Computer Aided Des
- Case, Walker E. BS 1922 F1  
Deceased
- Casebolt, Richard G. BS 1983 F1  
Route 1 Box 57; Fair Play MO 65649
- Casper, Vernon O. BS 1949 F1  
37 Bittersweet Ln; Mt Kisco NY  
105490000  
IBM; 1000 Westchester Ave; White  
Plains NY 106000000 Proj Mgt
- Casteel, Gerald R. BS 1956 F1  
2135 Northview Dr; Marion IA 523020000  
Rockwell Intl-Collins Radio; 321 3rd  
St. SL; Cedar Rapids IA 524010000  
Mgr of Graphics Serv
- Casterline, Douglas J. BS 1974 F1  
P O Box 853; Mt Home AR 726530000  
Armc; Assoc Engr
- Castro, Juan V. BS 1978 F1  
Carrera 24 #9-22; San Cristobal  
Venezuela 74  
CADAFE; Ave Sanz El Marques; Caracas  
Venezuela 74
- Cattlett, Raymond E. BS 1977 F1  
10414 Cactus flower; Houston TX  
770860000  
Halliburton-Brown & Root; P O Box 3;  
Houston TX 770010000 Assoc Engr
- Cerny, Timothy M. BS 1978 F1  
RR 1 Box 246; Pacific MO 630690000
- Cerulo, Michael E. BS 1974 F1, MS 1977 F1  
3915 Thimbleglen Dr; Cincinnati OH  
452300000  
General Electric; 1-75 & Neumann Way  
MS:N-56; Evendale OH  
Elec Design Engr
- Cha, Bui Tho BS 1976 F1  
P O Box 10172 LUS; Beaumont TX  
777100000  
Gulf States Utilities; Liberty & Pearl  
St; Beaumont TX 777040000  
Planning Engr
- Chamberlin, Gregory R. BS 1976 F1  
Current Address Needed
- Chamorro, Rodrigo S. MS 1979 F1  
Constancio Vigil 1558 Las Condes;  
Santiago Chile 23  
Endesa; Santa Rosa 76; Santiago Chile  
23
- Chan, Wai Yin MS 1983 F1  
590-596 Queens Rd W 7/F Blk E; Hong  
Kong Hong Kong 37
- Chanane, Bilal MS 1979 F1  
1 Rue Ezroug Ezraimi; Zerouk, Blida  
Algeria 11
- Chandler, E. Stanley BS 1969 F1  
902 Emerson; Wichita KS 672120000  
Koch Indust; P O Box 2256; Wichita KS  
672010000 Elec Engr
- Chang, Chau-Chih BS 1971 F1  
Current Address Needed
- Chang, Hsing-Yuan MS 1975 F1  
Current Address Needed
- Chang, James J. MS 1969 F1  
4317 Vista Park; San Jose CA 951360000  
Synertek Inc; 3001 Stender Way; Santa  
Clara CA 950520000 Staff Engr
- Chang, Jung-Chuan BS 1979 F1  
Current Address Needed
- Chang, Kou Q. MS 1971 F1  
Current Address Needed
- Chang, Yu Tai MS 1976 F1  
3421 Wimbledon; Cibola TX 781080000  
Motorola;
- Chaonirattaisai, Chanin BS 1979 F1,  
MS 1981 F1  
23 Soi Aramsri Phayathai; Bangkok  
Thailand 72

Chapman, Jacquelyn D. BS 1980 FI  
1962 Semple Ave; St Louis MO 631120000  
Laclede Gas Co; 3950 Forest Park Blvd;  
St Louis MO 631080000

Chapple, Steve D. BS 1983 FI  
7040 Avalon; Kansas City MO 64152

Charlson, Earl J. BS 1960 FI  
104 W Leslie Lane; Columbia MO  
652010000  
UMC; 221 Elec Engr; Columbia MO  
652010000 Prof E E

Chase, David M. BS 1968 FI  
Current Address Needed

Chase, James D. BS 1967 FI  
26 W 517 Embden Ln; Wheaton IL  
601870000  
Procter & Gamble; 169 E Grand; St  
Louis MO 631740000

Chatham, Gerald K. BS 1962 FI  
2602 Barreville Rd; Mc Henry IL  
600500000  
United Airlines;

Cheadle, Keith F. BS 1951 FI  
Current Address Needed

Cheek, Michael R. BS 1970 FI  
9730 NW Overhill Dr; Parkville MO  
641520000  
Kansas City Power & Light; 1330  
Baltimore; Kansas City MO 641080000  
I & D Engr

Chen, Jackson J.C. MS 1979 FI  
Current Address Needed

Chen, Sun-Den HS 1983 FI  
21 16-1 Ln 175 Sec 2 Nan-Ya W;  
Ban-Chiao Taiwan FI

Chen, Willie Y. BS 1950 FI  
14734 B Perthshire; Houston TX  
770790000  
Halliburton-Brown & Root; P O Box 3;  
Houston TX 770010000 Sr Staff Mgr

Chen, Yu K. MS 1967 FI  
Current Address Needed

Cheng, Isan-Huei MS 1982 FI  
101 N 4th St #B; Alhambra CA 918010000  
McGraw-Hill; 17021 Kingsview Ave;  
Carson CA 907460000 Elec Engr

Chenoweth, John S. BS 1971 FI  
1405 Angelina Bend; Denton TX  
762010000  
Tocom Inc; 3301 Royalty Row; Irving TX  
750600000 Systems Engr Mgr

Cherrick, Irwin I. BS 1942 FI  
4508 Greta Street; Bethesda MD  
200140000  
Bechtel Power Corp;

Chev, William R. BS 1949 FI  
568 Hamilton; Pleasanton CA 945660000  
Centaur Mfg Inc; 743 Landess Ave;  
Milpitas CA 950350000 President

Chicoineau, Philippe BS 1977 FI  
1031 Simmons Ave; St Louis MO  
631220000  
McDonnell Douglas; P O Box 516; St  
Louis MO 631660000 Associate Engr

Ching, Shingfat S. PhD 1976 FI  
Digital Equip Corp; 146 Main St;  
Maynard MA 017540000 Software Engr

Chinn, Russell A. BS 1977 FI  
P O Box 2896; Lake Charles LA  
706020000  
Monsanto; 800 N Lindbergh Blvd; St  
Louis MO 631660000 Design Production

Chiriboga, Jorge A. MS 1975 FI  
Casilla 5863; Guayaquil Ecuador 26  
Politec Super Sch of Litoral; Casilla  
5863; Guayaquil Ecuador 26 Prof

Chittenden, Rudy M. BS 1964 FI,  
MS 1965 FI  
7016 Pleasant Dr; Charlotte NC  
282110000  
IBM; Engineering Mgr

Choate, Robert L. BS 1950 FI, MS 1951 D5  
274 Prospect Dr; Leesburg VA 220750000  
Northern VA Community College; 8333  
LittleRiver Turnpike; Annandale VA  
220030000 Asst Prof-Elec

Choate, Ronald E. BS 1980 FI  
7005 N Fisk; Kansas City MO 641510000  
Bendix; Assoc Engr

Choflet, Stanley J. BS 1982 FI  
8654 Bruton Parish Ct #201; Monasses  
VA 221100000

Chorney, Peter L. BS 1952 FI  
508 Euclid Ave Box 46; Hoopeston IL  
609420000  
FMC Corp; 103 E Maple St; Hoopeston IL  
609420000 Sr Electrical Engr

Choi, Pham Quy BS 1976 FI  
1488 Kathleen Way; Elk Grove Village  
IL 600070000  
Motorola; 1301 E Algonquin Rd;  
Schaumburg IL 601950000  
Electronics Engr

Chott, Joseph R. BS 1966 FI, MS 1967 FI  
3329 Haas Ave; Bridgeton MO 630440000  
McDonnell Douglas; P O Box 516; St  
Louis MO 631660000

Choura, Ronald G. BS 1971 FI  
5884 Beuna Pkwy; Hadfield MI 488400000  
MI Public Service Comm; 6545  
Mercantile Way; Lansing MI 489090000  
Sr Communications Engr

Chow, Ming-Chwan MS 1966 FI, PhD 1968 FI  
Current Address Needed

Chrisman, Keith E. BS 1979 D2, BS 1979 FI  
11739 Dry River Court; Reston VA  
220910000  
Sperry Rand-Systems Management; 12010  
Sunrise Valley Dr; Reston VA 220910000  
MIS

Christensen, George W. BS 1964 FI  
1300 Lincoln; Mt Prospect IL 600560000  
Advance Schools Inc; 5900 Northwest  
Bwy; Des Plaines IL 600160000  
Exec Vice Pres

Christian, Elaine A. BS 1978 FI  
See Balliew, Elaine A.

Christian, James H. BS 1967 FI  
Current Address Needed

Christians, Scott L. BS 1974 FI  
950 Mayfield; Cary IL 600130000

Chu, Ming-Shian BS 1973 FI  
Current Address Needed

Chuck, Stephen I. BS 1960 FI  
16382 Redlands Ln; Huntington Beach CA  
926470000  
TRW Inc; 1 Space Pk; Redondo Beach CA

Chung, Cao V. MS 1972 FI  
Current Address Needed

Ciardullo, Daniel A. BS 1980 FI  
1565 Layven; Florissant MO 630310000  
McDonnell Douglas; P O Box 516; St  
Louis MO 631660000 Assoc Engr

Cima, Gregory F. BS 1970 FI  
137 W Webster St; Benton IL 628120000  
Cima Electrical & Mine Ser; PO 66;  
Thompsonville IL 628900000

Ciskowski, Edward M. BS 1977 FI  
Requests No Mail

Clark, James D. BS 1968 FI  
5259 A Cedarstone Ct; St Louis MO  
631290000  
Union Electric; P O Box 149; St Louis  
MO 631660000 Engr

Clark, Robert A. BS 1976 FI  
1316 Cinnamon Hills Dr; St Charles MO  
633010000  
MS River Trans Corp; P O Box 14521; St  
Louis MO 631780000 Proj Engr

Clark, Robert E. BS 1971 FI  
4420 Glenwood Hills Dr NE; Albuquerque  
NM 871110000  
Letter Press Service; 3209-C Matthen  
Ave NE; Albuquerque NM 871070000  
Owner

Claypool, Michael L. BS 1982 FI  
235 S Old Orchard; Webster Groves MO  
63190000  
McDonnell Douglas; PO Box 516; St  
Louis MO 631660000

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Clements, John L. BS 1963 F1  
3935 E Yucca; Phoenix AZ 850280000  
GIE-Automatic Electric; 2500 W Utopia  
Rd; Phoenix AZ 850280000  
Chief Programmer

Clemmons, Russel R. BS 1971 F1  
1310 Zachary Circle; Midwest City OK  
731100000  
Magnetics Peripherals Inc;  
Sr Elec Engr

Clendenin, Christopher K. BS 1982 F1  
914 Quince; St Charles MO 633010000  
McDonnell Douglas;

Clerici, Giovanni C. MS 1978 F1  
Viale Milano #5976; 16035 Rapallo  
Italy 43

Cleve, Bernard F. BS 1962 F1  
336 Royal Valley; St Louis MO  
631410000  
McDonnell Douglas; P O Box 516; St  
Louis MO 631660000 Lead Engr

Clifton, Keith Alan BS 1982 F1  
217 Mitchell Blvd; Lubbock TX  
794160000  
U S Air Force; Reese Air Force Base;  
Lubbock TX 794890000 2nd Lt

Cline, Larry G. BS 1965 F1  
Deceased

Clinkingbeard, Terry A. BS 1970 F1,  
MS 1976 F1  
15 Oak Creek Dr; St Charles MO  
633010000  
McDonnell Douglas; P O Box 516; St  
Louis MO 631660000 Sr Engr

Clippard, Richard W. BS 1950 F1  
5540 Larkwood Rd; Columbus OH  
432290000  
General Electric; Salesman

Crites, Paul L. BS 1974 F1  
9 Taggart Drive; Carlinville IL  
626260000  
Exxon; P O Box 2180; Houston TX  
770010000 Sr Staff Plan Analyst

Ciodfelter, Dennis B. BS 1980 F1  
1125 Kilgore Dr; St Louis MO 631370000  
Monsanto; 1700 S Second St; St Louis  
MO 631770000 Proj Engr I

Ciodfelter, Gene C. BS 1957 F1  
11388 Fox Hall Ln; St Louis MO  
631360000  
U S VA Hospital; Jefferson Barracks  
Div; St Louis MO 631250000  
Chief-Engr Serv

Ciodfelter, Timothy BS 1983 F1  
71317 Amboy Ln; St Louis MO 63136  
Emerson Electric; Liability Engr

Close, Maxwell L. BS 1963 F1, MS 1968 N1  
Accu Ray; 650 Ackerman Rd; Columbus OH  
432020000 Vice President

Cious, Charles E. BS 1970 F1, MS 1972 F1  
2391 Wesglen Estates Dr; Maryland Hts  
MO 630430000  
McDonnell Douglas; Sr Engr

Clubb, Jerry J. BS 1959 F1  
194 Western Hill Dr; Madison AL  
357580000  
NASA; Data Sys Lab; Marshall Space Ctr  
AL 358120000 Engr

Coalson, William H. BS 1973 F1  
11827 Cynthia Dr; Maryland Hts MO  
630430000  
McDonnell Douglas; P O Box 516; St  
Louis MO 631660000 Sr Engr

Coats, Charles L. Jr. BS 1960 F1  
Current Address Needed

Cobb, Donald W. BS 1971 F1  
Rt 3 Box 228; Wright City MO 633900000  
MO Edison Co; Dist Engr

Cobble, James J. BS 1972 F1, MS 1982 F1  
1371 Heritage Landing; St Charles MO  
633010000  
McDonnell Douglas; P O Box 516; St  
Louis MO 631660000

Cochran, Bryan Craig BS 1982 F1  
805 Anderson St; Warrensburg MO  
640930000  
Rock Island Arsenal;  
Cochran, Fredrick D. BS 1950 F1  
Rt 1 Box 175A; Peculiar MO 640780000  
Kansas City Power & Light; 1330  
Baltimore; Kansas City MO 641050000  
Staff Supt

Coddington, William H. BS 1935 F1  
1700 5th Ave West Villa 33;  
Hendemonville NC 287390000  
Executive Search Inc; 21556 Telegraph  
Rd; Southfield MI 480750000 Sr Assoc

Coffman, James D. BS 1960 F1  
208 Pine Lake Rd; Collinsville IL  
622340000  
AT&T-Southwestern Bell; 112 N 4th St;  
St Louis MO 631020000  
Area Vice Pres-Service Div

Cogan, Daniel L. BS 1979 F1  
9205 Montgall; Kansas City MO  
641320000  
Bendix; 95th & Troost; Kansas City MO  
641310000 Engr

Cohen, Jeffrey L. BS 1970 F1  
584 Fieldstone Ln; Ballwin MO  
630110000  
Killark Electric Mfg Co; 3940 Easton;  
St Louis MO 631130000  
Director of Intl Marketing

Cohen, Stephen R. BS 1971 F1  
1232 Preston Park; Creve Couer MO  
631160000  
Sachs Elec Co; 5540 W Park; St Louis  
MO 631100000 Elec Engr

Cole, Michael L. BS 1981 F1  
356 Poplar Forest Dr; Lemay MO  
631250000  
General Electric; 1015 Locust; St  
Louis MO 631010000 Field Engr

Cole, Patrick L. BS 1978 D5, MS 1980 F1  
2110-102 Orchard; Urbana IL 618010000  
Univ of Ill; Physics Dept; Urbana IL  
618010000 Graduate Student

Coleman, Gerard B. BS 1966 F1  
21427 Park Valley Dr; Katy TX  
774500000  
Texas Instruments; Section Manager

Coleman, Glenn J. BS 1959 F1  
10726 Manchester Rd; St Louis MO  
631220000  
Self Employed

Coleman, Michael W. BS 1982 F1  
1434 Mews Apt C; Kansas City MO  
641310000  
Bendix; PO Box 1159; Kansas City MO  
641410000 Engr

Coleman, Scott G. BS 1980 F1  
1729 E 32nd; Joplin MO 648010000  
King Radio Corp; 400 N Rogers Rd;  
Olathe KS 660610000 Quality Engr

Coleman, William G. BS 1949 F1  
1001 Randy Dr; Cedar Hill TX 751040000  
Chaparral Steel; P O Box 1100;  
Midlothian TX 760650000  
Plant Electrical Engr

Coteno, Dale R. BS 1972 F1  
1110 E Sycamore; Canton IL 615200000  
Freeman United Coal Co; Elec Engr

Collier, John O. BS 1977 F1  
Commonwealth Edison; 72 W Adams Rm  
1139; Chicago IL 606030000 Engr

Collier, William H. BS 1940 F1  
Deceased

Collins, Charles G. BS 1936 F1  
638 Marshall Rd; Vacaville CA  
956880000

Collins, Clyde W. Jr. BS 1963 F1  
1904 Drake Dr; Richardson TX 750810000  
Rockwell Intl; Elec Engr

Collins, Robert I. BS 1953 F1  
Current Address Needed



- Collins, Walter K. BS 1968 F1  
6608 W 164th Terr; Stillwell KS  
660850000  
Black & Veatch; 1500 Meadow Lake Pkwy;  
Kansas City MO 641140000 Elec Engr
- Colona, Lawrence J. BS 1970 F1  
1734 Woodland; Wichita KS 672030000  
Westinghouse; Field Service Engr
- Compas, Elmer L. BS 1950 F1  
Current Address Needed
- Compton, Billy R. BS 1975 F1  
6330 Carnation St; Beaumont TX  
777060000  
Gulf States Utilities; P O Box 2951;  
Beaumont TX 777040000  
Trans Planning Engr
- Compton, Howard E. BS 1936 F1  
Deceased
- Compton, James D. BS 1965 F1  
RD 3 Cedar Ridge Rd; Griffin GA  
302230000  
Delta Airlines; Pilot
- Conant, Paul C. BS 1979 F1  
2810 Indiana; St Louis MO 631180000  
Anheuser-Busch; 721 Pestalozzi; St  
Louis MO 631180000 Proj Engr
- Conde, Daniel C. BS 1978 F1  
3935 S Kalispell St; Aurora CO  
800130000  
Chevron Companies; P O Box 599; Denver  
CO 800130000 Des Engr-Telecom & Data
- Conigliaro, Anthony N. BS 1967 F1  
2217 kehrls Ridge Dr; Chesterfield MO  
630170000  
Irene Co; 9003 A Manchester; St Louis  
MO 631430000 Sales Engr
- Conley, Olin K. BS 1964 F1  
4477 Vermilion; St Louis MO 631280000  
Monsanto; 800 N Lindbergh Blvd; St  
Louis MO 631660000 Mng Network Engr
- Connelly, Charles E. BS 1973 F1,  
MS 1975 F1  
7728 Crisis; Raytown MO 641380000  
Phillips PetR Co; 2029 Fairfax  
Trafficway; Kansas City KS 661150000  
Staff Engr
- Conner, Robert P. BS 1965 F1  
1949 McPherson St; Richland WA  
993520000  
Westinghouse; Sr Electronic Engr
- Conrad, Charles P. BS 1971 F1, MS 1976 M1  
1624 Shreveport Trl; Plano TX  
750230000  
TX Instruments; 13500 N Central Expy;  
Dallas TX 752220000 Elec Des Engr
- Conrad, James R. BS 1975 F1  
192 Melbourne; Idaho Falls ID  
834010000  
LG&G-Idaho Inc; PO Box 1625; Idaho  
Falls ID 843010000 Sr Engr
- Conrath, Douglas C. BS 1982 F1  
11200 Horrick; Kansas City MO  
641340000  
Bondix; Assoc Engr
- Conrow, Dennis D. BS 1964 F1  
13112 5th Street; Grandview MO  
640300000  
Univ of Kansas; Chief Eng
- Constance, Charles D. BS 1972 F1  
5204 Pine Hill Cir; Howell MI  
488430000  
General Motors-Proving; General Motors  
Rd; Milford MI 480420000
- Cook, Arthur L. Jr. BS 1949 F1  
Deceased
- Cook, David L. BS 1960 F1  
3503 Comanche Pl; Owensboro KY  
423010000  
General Electric; Process Engr
- Cook, Frank S. Jr. BS 1970 F1, MS 1970 M1  
212 So Dade; Ferguson MO 631350000  
A&I-Western Electric; 1000 Des Peres  
Rd; Des Peres MO 631310000  
Information Systems Staff
- Cook, Henry B. BS 1971 F1  
119 Sally Ln; Madison AL 357580000  
U S Army; Readiness Group; Redstone  
Arsenal AL 358090000 Elec Engr
- Cook, Jerome E. BS 1972 F1  
414 Price Ln; Clinton MO 647350000  
Peabody Coal Co; P O Box 99; Freeburg  
IL 622430000
- Cook, Jonathan E. BS 1980 F1  
2204 Keeven Ln; Florissant MO  
630310000  
Emerson Electric; 8100 W Florissant;  
St Louis MO 631360000 Sr Engr
- Cook, Marvin D. BS 1960 F1  
420 Field; Minneapolis MN 554260000  
Univ of Minn; Assoc Scientist
- Cook, Michael M. BS 1971 F1  
2313 Benbrook; Carrollton TX 750070000  
Johnson Controls; 1931 Hereford Dr;  
Irving TX 750620000  
Bldg Automation Sys Tech Supv
- Cook, Paul A. BS 1965 F1  
3046 Havelock Cir; Lexington KY  
405030000  
IBM; 740 New Circle Rd; Lexington KY  
405110000 Staff Engr
- Cook, Robert D. BS 1971 F1  
1104 Broadmoor; Bloomington IL  
617010000  
GIE; 1312 E Empire; Bloomington IL  
617010000 Trans Engr
- Cooley, John Gerald BS 1982 F1  
121 Country Air Mble Hm Pk; Pacific MO  
630690000  
Union Electric; Asst Engr
- Coombs, William A. BS 1965 F1  
1417 E 23rd Ave; N Kansas City MO  
641160000  
Bendix; 95th & Troost; Kansas City MO  
641140000 Program Engr
- Coonce, Homer E. BS 1952 F1  
208 Sycamore Dr; Naperville IL  
605400000  
A&I-Bell Labs; Naperville-Wheaton Rd;  
Naperville IL 605400000  
Elec Engr/Mbr Tech Staff
- Coonce, William C. BS 1968 F1  
1251 S Oakcrest Rd; Arlington VA  
222020000  
U S Navy; Ordnance Lab; White Oak MD  
209100000 Elec Engr
- Coonrod, Neil R. BS 1978 F1  
2816 Muriel Dr NW; Cedar Rapids IA  
524050000  
Rockwell Intl-Collins Radio; 5200 C  
Ave NE; Cedar Rapids IA 524040000  
Elec Engr
- Cooper, Chlorus D. BS 1966 F1  
PO Box 2205012 MS 4295; Dallas TX  
752650000  
TX Instruments; 13500 N Central Expy;  
Dallas TX 752220000 Appl Res Engr
- Cooper, George H. BS 1966 F1  
1200 Ann; Pontiac IL 617640000  
Caterpillar Tractor Co; 4 H Rd;  
Pontiac IL 617640000  
Buyer of Direct Materials
- Cooper, Gerald L. BS 1965 F1  
Current Address Needed
- Cooper, Richard C. BS 1952 F1  
763 Knottbridge; Lewisville TX  
750670000  
Westinghouse; 8400 John Carpenter Fwy;  
Dallas TX 752470000 Marketing Rep
- Cooper, Richard D. BS 1977 F1  
3131 Cedar Ln; Festus MO 630280000  
Union Electric; Asst Plant Engr
- Cooper, Wilton L. BS 1980 F1  
3501 Dodier; St Louis MO 631070000  
Union Electric; 1901 Gratiot; St Louis  
MO 631010000 Elec Engr
- Cope, William R. BS 1965 F1  
PO Box 1; Poplar Bluff MO 639010000  
Summers & Cope & Walsli; PO Box 1;  
Poplar Bluff MO 639010000 Attorney

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Copeland, Gregory C. BS 1977 F1,  
MS 1979 F1  
1825 Charmeran; San Jose CA 951240000  
ESL Inc; 495 Java Dr; Sunnyvale CA  
940860000 Mbr Tech Staff

Copeland, Kenneth W. BS 1980 F1,  
MS 1982 F1  
508 Williams; Eureka MO 630250000

COPENING, James W. BS 1944 F1  
1919 Hurstbourne Circle; Louisville KY  
402200000  
Westinghouse; 1914 Bishop Lane;  
Louisville KY 402180000  
Industrial Rep

Corbett, John E. BS 1948 F1  
60 Clydesdale Dr; Pittsfield MA  
012010000  
General Electric; 100 Plastics Ave;  
Pittsfield MA 012010000  
Electromagnetic Engr

Corbin, Gary A. BS 1978 F1  
419 W Lincoln #J-2; Kokomo IN  
469010000  
General Motors-Delco; 700 E Firmin;  
Kokomo IN 469010000 Mfg Engr

Cordes, Robert F. BS 1965 F1  
Current Address Needed

Corrigan, John D. BS 1965 F1, MS 1966 F1,  
PhD 1973 F1  
4401 Claremont Ct; Bridgeton MO  
630440000  
McDonnell Douglas; P O Box 516; St  
Louis MO 631660000 Sr Staff Engr

Costley, Leon J. Jr. BS 1949 F1  
Current Address Needed

Cothern, Amy S. (Nee Mc Daniel, Amy S.)  
BS 1981 F1  
9561 Vance Ct; Broomfield CO 800200000  
IBM; Assoc Engr

Cothran, Stephen A. BS 1968 F1  
8647 Poplar Ridge Ct; Florence KY  
410420000  
Instrumentation Serv; P O Box 563;  
Florence KY 410420000  
Process Control Spec

Coulter, Gary D. BS 1969 F1  
2244 C Renault Dr; St Louis MO  
631410000  
McDonnell Douglas; PO Box 516; St  
Louis MO Radar Engr

Coulter, Gene G. BS 1948 F1  
Current Address Needed

Coulter, John C. BS 1970 F1  
11404 W 74th St; Shawnee Mission KS  
662030000  
Shaw Elec; Vice Pres of Eng

Council, Joseph A. BS 1976 F1  
Box 4071; Woodland Park CO 808630000  
KAMAN; Research Scientist

Couture, Daniel G. BS 1970 F1  
7801 W 96th Terrace; Overland Park KS  
662120000  
Black & Veatch; P O Box 8405; Kansas  
City MO 641140000 Control Engr

Cowan, Duane E. BS 1960 F1  
Rd 1 Box 1437; Bethel PA 195070000  
AT&T-Western Electric; 2525 N 11th St;  
Reading PA 196050000  
Development Engr

Cowan, William E. BS 1972 F1  
12 Ivey Ct; Bloomington IL 617010000  
General Electric;

Cowgill, Allan M. BS 1971 F1  
706 Lester St; Kennett MO 638570000  
Federal-Mogul; Malden Plant; Malden MO  
638630000 Mfg Engr

Cox, Delbert R. BS 1949 F1, MS 1951 F1,  
MECH E 1951  
7705 Oakridge Dr SE; Huntsville AL  
358020000  
McDonnell Douglas-Tech Service; PO Box  
1181; Huntsville AL 358070000  
Dir-Engr

Cox, John M. BS 1979 F1  
10370 Granite Crk Ln; Oakton VA  
221240000  
E-Systems, Inc; 7700 Arlington Blvd;  
Falls Church VA 220460000  
Des/Dev Elec Engr

Cox, William E. IV BS 1967 F1  
5168 Whipple Lake Rd; Clarkston MI  
480160000  
Consumers Power Co; 212 W Michigan  
Ave; Jackson MI 492010000  
Industrial Mkt Supvr

Crabtree, Richard L. BS 1966 F1  
17 Carolyn Dr; Edwardsville IL  
620250000  
Laclede Steel Co; P O Box 266; Alton  
IL 620040000 Plant Engr

Cradic, Curtis Ray BS 1981 F1  
5694 E Yosemite; Columbia MO 652010000  
3M Co; PO Box 1228; Columbia MO  
652050000 Quality Control

Craig, Charles M. BS 1969 F1  
1410 S 13th; Blue Springs MO 640150000  
AT&T-Southwestern Bell; 500 E 8th;  
Kansas City MO 641060000  
Staff Supervisor

Crall, Richard F. MS 1967 F1, PhD 1970 F1  
10055 SW Wasco Way; Tualatin OR  
970620000

Cramer, Gary R. BS 1971 F1  
Current Address Needed

Cramer, Roy R. BS 1949 F1  
704 Bell Drive; Excelsior Springs MO  
640240000  
MO Power & Light; Dist Mgr

Crandell, Elva L. BS 1955 F1  
11300 North Central Dr; Dallas TX  
752430000  
Maigos; Assoc Exec Dir

Crane, Gregg R. BS 1970 F1  
4707 El Monte; Roeland Park KS  
662050000  
Black & Veatch; 1500 Meadowlark;  
Kansas City MO 641140000 Elec Engr

Crawford, David M. BS 1974 F1  
Requests No Mail

Crawford, Harold L. BS 1972 F1  
9511 Middleton R3 Bx 192A; Lees Summit  
MO 640630000  
Armco; 7000 Roberts; Kansas City MO  
641250000 Process Engr

Crawford, Jack L. BS 1963 F1, MS 1964 F1  
6960 N Solaz Primero; Tucson AZ  
857180000  
IBM; Advisory Engr

Crawford, Samuel K. BS 1971 F1  
7151 W Indian School, Apt 2038;  
Phoenix AZ 850330000  
Western Geophysical; Elec Engr

Crawley, William L. BS 1953 F1  
860 Lindeman Rd; St Louis MO 631220000  
McDonnell Douglas; P O Box 516; St  
Louis MO 631660000

Creath, Roy C. BS 1969 F1  
5835 Loran; St Louis MO 631090000  
MO Pacific R R; 210 N 13th-Electronic  
System; St Louis MO 631030000  
Advisory Systems Analyst

Creelius, Percy H. Jr. BS 1958 F1  
11950 Olalia Valley Rd SE; Olalia WA  
983590000  
U S Navy; Naval Yard-Puget Sound;  
Bremerton WA 983140000 Elec Engr

Creesh, Harry L. BS 1965 F1  
1409 9th St; Charleston IL 619200000  
Eastern Ill Univ;  
Mgmt Analyst Programmer II

Cremer, Adolph F. BS 1968 F1  
P O Box 4381; Houston TX 772100000  
Amoco; Production Superintendent

Crenshaw, Reuben L. BS 1963 F1  
6910 Winchester; St Louis MO 631210000  
R & L Reality; 6726 Nat Bridge; St  
Louis MO 631210000  
Real Estate Broker

Cretin, Paul J. BS 1969 FI, MS 1972 M1  
 700 Fox Creek Rd; Rolla MO 658010000  
 UMR; 204 Harris Hall; Rolla MO  
 654010000 Indust Spec-Meramec & HOST  
 Crews, Eddie L. BS 1965 FI  
 7001 Rene St; Shawnee Mission KS  
 662160000  
 Control Data Corp; 5700 Broadmoor, Ste  
 #820; Shawnee Mission KS 662020000  
 Account Repr  
 Cribb, John A. BS 1972 FI  
 407 Felicie Dr; Lafayette LA 705060000  
 ECJ Consulting Firm; Elec Engr  
 Cripps, Michael P. BS 1970 FI  
 1215 S Berry Rd; St Louis MO 631220000  
 Sverdrup Corp; 801 N 11th St; St Louis  
 MO 631010000 Elec Engr  
 Crister, Lee C. Jr. BS 1966 FI  
 1110 Wedgwood; St Charles MO  
 633010000  
 McDonnell Douglas; Lambert Field; St  
 Louis MO 631660000 Section Manager  
 Crissup, David A. BS 1970 FI  
 1513 W 8th St Terr; Lees Summit MO  
 640630000  
 Burns & McDonnell; Engr  
 Crocker, John W. BS 1960 FI  
 218 Pine; Leavenworth KS 660480000  
 Retired  
 Cromer, Charles F. BS 1949 FI, MS 1951 FI  
 24 Trailridge Dr; Kimberling City MO  
 656660000  
 Westinghouse; Retired  
 Crono, James S. BS 1960 FI  
 11415 Grand Oak; Grand Blanc MI  
 484300000  
 Eaton Corp-Cutler-Hammer; Chief Engr  
 Crossland, Kenneth L. BS 1982 FI  
 5423 Haymeadow Place; Peoria IL  
 616150000  
 Caterpillar Tractor Co; 100 NE Adams;  
 Peoria IL 616150000 Test Engr  
 Crowell, Ronald F. BS 1970 FI  
 Pan American Pot Corp; Drawer A;  
 Loveland TX 793360000 Petr Engr  
 Crowley, A. David BS 1978 FI  
 6364 St Johns Dr; Eden Prairie MN  
 553480000  
 Control Data Corp; 2401 N Fairview;  
 Roseville MN 551130000 Proj Engr  
 Crumbaugh, Daniel H. BS 1928 FI  
 232 Westgate Dr; Valparaiso IN  
 463830000  
 Retired  
 Crutcher, Danny R. BS 1964 FI  
 P O Box 104; Webb City MO 648700000  
 St Johns Medical Ctr;  
 Bio Medical Engr  
 Culver, Robert L. BS 1980 FI  
 6807 E 144th St; Grandview MO  
 640300000  
 Bendix; P O Box 1159; Kansas City MO  
 641410000 Assoc Engr-Quality Cntrl  
 Culwell, Joseph T. BS 1978 FI  
 P O Box 82; Troy Mills IA 523440000  
 Rockwell Intl-Collins Radio; 5200 C  
 Ave NE; Cedar Rapids IA 524020000  
 Engr  
 Cummings, Ted M. BS 1976 FI  
 3022 Aderon Ln; Garland TX 750420000  
 Care Medical Products; 2005 Bob  
 Wallace Ave SW; Huntsville AL  
 358050000 Sr Des Engr  
 Cummins, Eugene J. Jr. BS 1968 FI  
 19020 Quail Valley Blvd; Gaithersburg  
 MD 208790000  
 U S Navy; 3801 Nebraska Ave NW-NESSEC;  
 Washington DC 203900000  
 LCDR-Dir Comm Security  
 Cunningham, Donald G. BS 1969 FI  
 1121 Delwood Dr; Mooresville IN  
 461580000  
 Borg-Warner; 3525 Hovey St;  
 Indianapolis IN 462180000  
 Cupp, Joseph W. BS 1975 FI  
 Current Address Needed

Gurd, William H. Jr. BS 1970 FI  
 P O Box 31790; Phoenix AZ 850460000  
 Codes Corp; 2002 W 10th Pl; Tempe AZ  
 852810000 Principal Engr  
 Curle, Arthur E. BS 1975 FI  
 7652 Westchester; Belleville IL  
 622230000  
 Union Electric; P O Box 149; St Louis  
 MO 631660000 Dist Engr  
 Curruett, Claryl R. BS 1938 FI  
 Route 2, Box 931; Ft Worth TX  
 761350000  
 Retired  
 Curry, Jon F. BS 1981 FI  
 7060 Foxborough Dr; Indianapolis IN  
 462260000  
 U S Navy; Avionics Ctr 6000 E 21st;  
 Indianapolis IN 462180000 Elec Engr  
 Curtin, John F. BS 1961 FI, MS 1963 FI  
 6 Bradley Grove; Mitchell Park  
 Australia 15  
 E M I Electronics; Box 176; Salisbury  
 Australia 15  
 Curtis, Samuel D. BS 1971 FI  
 507 W Broadway; Johnson City IL  
 629510000  
 General Dynamics-Freeman Coal; P O Box  
 100; W Frankfort IL 628960000  
 Elec Engr  
 Cutler, David BS 1934 FI  
 Current Address Needed  
 Cutts, James F. BS 1964 FI  
 Deceased  
 Cozze, Francis J. III BS 1966 FI  
 22271 SW 63rd Ave; Boca Raton FL  
 334330000  
 Modular Computer Sys, Inc; 1650 W  
 McHabb Rd; Ft Lauderdale FL 333090000  
 Engr  
 Dace, Ronald K. BS 1971 FI  
 P O Box 1621; Springfield IL 627060000  
 IL Commerce Comm; 527 E Capitol;  
 Springfield IL 627010000  
 Utility Engr  
 Dadmarz, Azita MS 1983 FI  
 Motorola Inc; P O Box 2931; Ft Worth  
 TX 761130000 Elec Engr  
 Dahl, Jerome P. BS 1974 FI  
 1641 Lake Park Dr; Raleigh NC  
 276120000  
 IBM; P O Box 12195; Triangle Park NC  
 Dajani, Mohamed Z. MS 1968 FI  
 P O Box 36543; Kuwait Arabian Gulf 97  
 Industrial Consultant Group; P O Box  
 36543; Kuwait Arabian Gulf 97  
 Director  
 Dalal, Piyush K. BS 1967 FI  
 Current Address Needed  
 Dailey, Gary R. BS 1958 FI  
 6388 Buttewood Dr; Noblesville IN  
 460600000  
 Certified Laboratory;  
 Sales Representative  
 Danesh, Parviz BS 1972 FI, MS 1975 FI,  
 MS 1976 B3  
 22421 Ravenway; Grand Terrace CA  
 923240000  
 Wyle Labs; 1841 Hillside; Norco CA  
 917600000 Staff Engr  
 Daneshvar, Bahram BS 1978 FI  
 6200 67 Ave N #105; Minneapolis MN  
 554296555  
 Danielsons, David G. BS 1981 FI  
 1609 Harrison Hill; Hannibal MO  
 634010000  
 Harris Corp; P O Box 4290; Quincy IL  
 623010000 Engr  
 Danner, Dale Randal BS 1982 FI  
 3374 Post Rd; Lexington KY 405030000  
 IBM; 740 New Cir Rd; Lexington KY  
 405110000 Engr  
 Danner, Thomas Joseph BS 1982 FI  
 Jardines de Ponce D-H-11; Ponce PR  
 007310000  
 Darbidian, Dro BS 1982 FI  
 Current Address Needed

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Darden, Stanley D. BS 1975 F1  
1101 Sequoia Trail; Madison WI  
537130000  
WI Power & Light; P O Box 192; Madison  
WI 537100000 Elec Engr

Dare, Paul D. BS 1973 F1  
507 S Broadway; Sesser IL 628840000  
Inland Steel; P O Box 566; Sesser IL  
628840000 Elec Engr

Da Silva, Marcus K. BS 1978 F1,  
MS 1981 F1  
11227 Claywood; St Louis MO 631260000  
Medical Doctor

Dauderman, Norman M. BS 1969 F1  
RR 2 Reding Rd Box 207A; Alhambra IL  
620010000  
McDonnell Douglas; P O Box 516; St  
Louis MO 631660000 Sr Engr

Daum, Edwin L. BS 1949 F1  
Current Address Needed

Daume, Arthur F. Jr. BS 1969 F1  
Rt #1; New Florence MO 633630000  
Self Employed

Davarpanah, Mahmoud MS 1971 F1,  
PhD 1975 F1  
Current Address Needed

Davidson, Charles C. BS 1949 F1  
2425 Ohio; Joplin MO 648010000  
Allgeier, Martin, Inc; P O Box 2277;  
Joplin MO 648010000 Assoc Vice Pres

Davidson, Don MS 1970 F1  
3414 Flagg Ave No; Minneapolis MN  
554270000  
Stearns Computer Tech;

Davidson, Fred L. BS 1967 F1  
155 W Ripley; Camarillo CA 930100000  
U S Navy; Missile Ctr; Pt Magu CA  
930030000

Davidson, John N. BS 1951 F1  
826 S Lincoln Ave; Springfield IL  
627040000  
IL Dept of Trans; 2300 S Dirksen Pkwy;  
Springfield IL 627640000  
Research Engr

Davidson, Kenton T. BS 1970 F1  
134 Wood Glen Ln; Lees Summit MO  
640630000  
Kansas City Power & Light; 1330  
Baltimore; Kansas City MO 641050000  
Staff Engr

Davidson, Robert N. BS 1960 F1  
4012 NE 57th Pl; Kansas City MO  
641190000  
TWA; P O Box 20126; Kansas City MO  
641950000 Master Engineer

Davis, Carl B. BS 1947 F1, BS 1954 F1  
5350 GraceLand Ave; Indianapolis IN  
462080000  
General Motors-Allison; P O Box 894,  
Dept 5894; Indianapolis IN

Davis, Gary W. BS 1957 F1  
547 Kevin Ct; Ridgecrest CA 935550000  
U S Naval Weapons Center; Code 01A3;  
China Lake CA 935550000  
Head-Telemetry Div

Davis, Gerald L. Jr. BS 1973 F1  
2610 Woodsage Dr; Florissant MO  
630330000

Davis, Jeff BS 1983 F1  
Pontiac Route; Gainesville MO 65655

Davis, John L. III BS 1971 F1  
9 Halloway; Northborough MA 015320000  
Digital Equip Corp; 146 Main St;  
Maynard MA 017540000 Engr Mgr

Davis, Lawrence S. BS 1975 F1  
1718 Tims Ln; Conroe TX 773010000  
Gulf States Utilities; P O Box 158;  
Conroe TX 773010000 Div Engr

Davis, Leslie E. BS 1965 F1  
Current Address Needed

Davis, Ralph T. Jr. BS 1955 F1  
1116 Sea Village Dr; Cardiff By The  
Sea CA 920070000  
Cubic Corp; Balboa Ave; San Diego CA  
921230000 VP-Simulation Sys

Davis, Robert S. BS 1972 F1  
4411 Foothill Dr; Boise ID 837030000  
Hewlett-Packard; P O Box 39; Boise ID  
837070000 Regional Sales Engr Mgr

Davis, Russell E. BS 1981 F1  
4009 E 110th Terr; Kansas City MO  
64137  
Bendix; P O Box 1159; Kansas City MO  
641410000 Assoc Engr

Davis, Walter H. BS 1958 F1  
111 60th Ave South; St Petersburg FL  
337050000  
Davis Electric Co; Box 38; Cape  
Girardeau MO 637010000

Davis, Wayne R. BS 1960 F1  
1411 Oide Coalmine Rd; Midlothian VA  
231130000  
Reynolds Metals Co; 6603 W Broad St;  
Richmond VA 232610000  
Indust Relations Rep

Daves, Ronald F. BS 1974 F1  
2211 Greenvalley; Carrollton TX  
750060000  
Structured Software Solutions; 1413  
Sequoia; Plano TX 750230000  
President

Dawson, Bradley S. BS 1981 F1  
Rt 6 Airway Dr; Fulton MO 652510000  
Union Electric; Asst Engr

Dawson, Jerry D. BS 1958 F1  
703 Carlett; Huntsville AL 358020000

Day, Edsel O. BS 1951 F1  
Rt 10 Box 1245; Springfield MO  
658030000  
Burlington Northern R R Co; 3253 E  
Trafficway; Springfield MO 658020000

Dean, Larry J. BS 1970 F1  
2660 Fleming; Florissant MO 630310000  
McDonnell Douglas; P O Box 516; St  
Louis MO 631660000 Sr Elec Engr

Deardeuff, Stephen E. BS 1981 F1  
9761 Venice Dr; St Louis MO 631360000  
Emerson Electric; 8000 W Florissant;  
St Louis MO 631360000 Electrical Eng

Deatherage, Donald R. BS 1968 F1  
24 Willmore; St Louis MO 631090000  
McDonnell Douglas; 2600 N  
3rd-Conduction Div; St Charles MO  
633010000 Elec Engr

Deaton, Christopher J. BS 1983 F1  
4119 Rainridge Dr; St Louis MO 63125

DeBolt, Donald G. BS 1949 F1, ELEC E 1970  
9122 Raeford Dr; Dallas TX 752430000  
D G DeBolt Co; P O Box 31328; Dallas  
TX 752310000 Owner

Dechant, Mark R. BS 1982 F1  
Current Address Needed

Deckelman, William F. MS 1974 F1  
768 Vanderville Dr; Fenton MO  
630260000  
McDonnell Douglas; P O Box 516; St  
Louis MO 631660000

Decker, Elmer R. Jr. BS 1970 F1  
Current Address Needed

Deegan, W. Curt BS 1965 F1  
1298 W Camino Real; Boca Raton FL  
334320000  
IBM; Sr Sys Engr

Deeken, Elmer N. BS 1950 F1  
4509 Hazeltan; Houston TX 770350000  
Retired

Deem, Jake O. BS 1969 F1  
Motorola; 8201 E McDowell Rd;  
Scottsdale AZ 852570000

Define, William E. BS 1982 F1  
4526 Sunnyview Apt 233; Oklahoma City  
OK 731350000

DeFord, Kenneth E. BS 1961 F1  
235 Fairview Ave; Long Valley NJ  
078530000  
AT&T-Western Electric; c/o BIL;  
Whippany NJ 079810000 Planning Engr

- DeGan, James J. BS 1952 F1  
21 Stonecleave Rd; Boxford MA  
019210000  
Varian Assoc; 8 Salem St; Beverly MA  
019010000 Sales Mgr
- Deget, Frank G. BS 1973 F1  
2649 Dandel Ave; Simi Valley CA  
930650000  
Hughes Aircraft; #833 Fallbrook Ave;  
Canoga Park CA 913040000 Tech Supv
- Degen, Gerald D. Jr. BS 1970 F1  
3701 Leathertop Dr; Plano TX 750750000  
Foague Prod & Drilling Service; 3626  
No Hall St; Dallas TX 752190000  
Operations Engr
- Degenhardt, Dean A. BS 1974 F1  
2767 D Wayfaring Ln; Lisle IL  
605320000  
Midcon Corp; 122 S Michigan Ave;  
Chicago IL 606030000  
Design Engr-Construct Dept
- Degenhardt, Lynn J. BS 1969 F1  
86 Valley Forge Dr; Oak Ridge TN  
378300000  
Union Carbide; P O Box X Bldg 1000;  
Oak Ridge TN 378300000 Elec Des Engr
- DeGonia, Paul K. BS 1963 F1  
291 Gina Ct; Pasadena MD 211220000  
Westinghouse; P O Box 1643; Baltimore  
MD 212030000 Assoc Engr
- Delavon, Samuel J. BS 1974 F1  
802 4th St SW; Waseca MN 560930000  
E J Johnson; 229 10th Ave SW; Waseca  
MN 560930000  
Elec Engr-Land Mobile Div
- Deken, James G. BS 1980 F1  
Rt 1 Box 71; Quilin MO 639610000  
Emerson Electric; 8000 W Florissant Bx  
4100; St Louis MO 631360000  
Elec Engr
- Dekold, Joseph M. BS 1973 F1  
5110 Tallview Ct; Dayton OH 454240000  
Wright-Patt AFB; ASD/EMACB Data Comm  
Brch; Dayton OH 454330000 Elec Engr
- Delaney, Robert L. Jr. BS 1968 F1  
8273 Greenwood Dr NE; Minneapolis MN  
554320000  
Control Data Corp; 4201 Lexington Ave  
N; St Paul MN 551120000  
Principal Sys Analyst
- De Lary, James J. MS 1971 F1  
1620 Del Norte; Richmond Ills MO  
631170000  
Sherwood Medical Inc; 11802 Westline;  
St Louis MO 631410000  
Sr Prod Dev Engr
- Deiker, R. Duon BS 1972 F1, MS 1974 F1  
Voice Communications Coil Co; P O Box  
1615; Paducah KY 420010000
- del Pozo L, Juan F. MS 1978 F1  
Rumichaca #610; Guayaquil Ecuador 26
- DeLurgio, Frank A. BS 1951 F1  
925 Roussillian Ct; St Louis MO  
631350000  
Emerson Electric; 8000 W Florissant Bx  
4100; St Louis MO 631360000 Sys Engr
- Demand, Donald James BS 1981 F1  
11802 E 82nd St R; Owasso OK 740550000  
Public Serv Co of Ok; P O Box 201;  
Tulsa OK 741020000 Electrical Engr
- Dencker, Elmer Robert BS 1982 F1  
3615 Apple Orchard; St Louis MO  
631250000  
McDonnell Douglas; PO Box 516; St  
Louis MO 631660000
- Denham, Donald C. BS 1969 F1, MS 1976 M1  
528 Pamela Ln; Kirkwood MO 631220000  
Union Electric; 1901 Gratiot; St Louis  
MO 631010000 Purchasing Agent
- Denney, Gary G. BS 1973 F1  
22 Eastview Dr; Fenton MO 630260000  
Sverdrup Corp; 801 North Eleventh; St  
Louis MO 630260000 Elec Engr
- Denney, Gary N. BS 1960 F1  
Current Address Needed
- Denningmann, Elroy BS 1968 F1  
523 Indian Hills Dr; St Charles MO  
633010000  
Fru-Con Corp-Fruco Engrs;  
Section Chief
- Dent, Harry L. BS 1952 F1  
223 Clark St; Mahwah NJ 074300000  
Western Union Co; One Lake St; Upper  
Saddle River NJ 074580000  
Microwave Extension Engr
- Denton, Randy G. BS 1977 F1  
1000 Hoffman St; Leadwood MO 636530000  
Conoco; Engr
- Deranja, Theodore J. BS 1965 F1  
3609 Diamond Head; St Louis MO  
631250000  
McDonnell Douglas; P O Box 516; St  
Louis MO 631660000  
Sr Tech Specialist
- Derhake, Anthony H. BS 1969 F1  
4507 Deer Run; Plymouth MI 481700000  
General Motors-Cadillac; 2860 Clark  
St; Detroit MI 482320000  
Auto Release Engr
- DeRigne, Scott L. BS 1982 F1  
539 F Church #B; Marion OH 433020000  
Dresser Industries; 617 Wst Ctr St PO  
Box 505; Marion OH 433020000  
Engr-Product Design Section
- DeRuiter, John L. BS 1970 F1  
17805 Willowbrook Dr; Sun City AZ  
853510000  
U S Army;
- Deso, Phillip O. BS 1968 F1  
Star Rt; Hartsville MO 656670000
- Deshon, Wallace F. BS 1967 F1, MS 1968 F1  
1336 Harned; Bartlesville OK 740030000  
Phillips Petr Co;  
Assoc Comp Prod Engr
- DeSpain, David R. BS 1969 F1  
7 Cedar Grove; Warrenton MO 633830000  
Union Electric; 1901 Gratiot; St Louis  
MO 631660000 Engr-Elec & Comm Des
- Detry, James I. BS 1976 F1  
734 W Dempster G4; Mt Prospect IL  
600560000  
Gould Inc; 40 Gould Center; Rolling  
 Meadows IL 600080000 Engineer
- Deiber, George B. BS 1948 F1  
Deceased
- Deutschan, Ronald L. BS 1963 F1  
2694B las Mananitas Dr; Valencia CA  
913590000  
General Electric;
- Devaney, Michael J. BS 1964 F1  
RR 1 Box 74 Spiva Crossing; Hallsville  
MO 652550000  
URC; Assoc Prof-Elect Engr
- De Vasto, Thomas D. BS 1981 F1  
663 Marshall Ave; Webster Groves MO  
631190000  
McGraw-Edison/Bussman Mfg Div;  
Applications Engr
- Devenport, Ronald D. BS 1969 F1  
3055 Willow Wood; St Charles MO  
633010000  
Emerson Electric; 8000 W Florissant Bx  
4100; St Louis MO 631360000  
Appl Engr
- Dever, John P. BS 1957 F1  
100 Greencraft Pl; Danville VA  
245410000  
Averett College; 420 W Main St;  
Danville VA 245410000 Prof
- DeVore, William E. BS 1966 F1  
2148 Brandywood Dr; Wilmington DE  
198100000  
Westinghouse; Sales Engr
- Dewar, Harold L. BS 1981 F1, 1975  
7145 Westmoreland; University City MO  
631300000  
McDonnell Douglas; McDonnell Blvd; St  
Louis MO 631660000 Electronics Engr

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Dewey, George C. BS 1964 F1  
9837 Colchis Ln; St Louis MO 631230000  
Wagner Electric; 6400 Plymouth; St  
Louis MO 631390000 Engr

DeWoody, Robert L. BS 1955 F1, MS 1958 F1  
P O Box 769; Fairhope AL 365320000  
Engles Shipbuilding;

Dey, William E. BS 1964 F1  
Current Address Needed

Diamant, Ronald Alan BS 1981 F1  
706 Arcadia Dr Apt 9; Bloomington IL  
617010000  
GIT; 1312 E Empire; Bloomington IL  
617010000

Dianosich, Charles S. BS 1939 F1  
Deceased

Dickens, Richard L. BS 1951 F1  
10433 Remington Ln; Dallas TX  
752290000  
Westinghouse; 8400 Carpenter Frwy;  
Dallas TX 752470000 Fellow Dist Engr

Dickerman, John H. BS 1953 F1  
15723 Labelle; La Puente CA 917450000

Dickey, Daniel E. BS 1964 F1  
Current Address Needed

Dickey, Fred M. BS 1964 F1, MS 1965 F1  
1700 N Baltimore; Derby KS 670370000  
Boeing; 3801 S Oliver; Wichita KS  
672100000 Research Engr

Dickinson, Ronald L. BS 1962 F1  
Rt 3 Box 47; Augusta KS 670100000  
Boeing; 3801 S Oliver; Wichita KS  
672100000  
Sr Spec Engr-Avionics Des Engr

Dicus, Joseph A. BS 1972 F1  
Deceased

Diebold, Morrell C. BS 1959 F1  
1118 Patricia; Cape Girardeau MO  
637010000  
Consumer Benefit Serv Inc; 824  
Independence; Cape Girardeau MO  
637010000 Dir-Agencies

Diebold, Stephen M. BS 1979 F1,  
MS 1981 F1  
3918 Harbaugh; Independence MO  
640550000  
Armco-Burns & McDonnell; P O Box 173;  
Kansas City MO 641410000  
Asst Elec Engr

Diecker, John T. BS 1978 F1  
308 Park Charles Blvd N; St Peters MO  
633760000  
Lemco Engr; 11933 Westline Ind Dr; St  
Louis MO 631410000 Des Engr

Dieckmeyer, Orrin J. Jr. BS 1972 F1  
2630 Park Ave; St Louis MO 631040000  
Monsanto; W G Krummrich Plant; Sauget  
IL 622010000 Elec/Instr Engr

Diekemper, Edwin V. BS 1983 F1  
Rt 1 Bx 714; Carlyle IL 62231  
Farmer

Diemer, Charles E. BS 1963 F1  
2915-C S Fairview; Santa Ana CA  
927040000  
McDonnell Douglas; 5301 Bolsa;  
Huntington Beach CA 926460000  
Consultant

Dieringer, Donald R. BS 1950 F1  
69 Prospect St; Demarest NJ 076270000  
L K Comstock & Co Inc; 155 E 44th St;  
New York NY 100170000 Vice Pres

Diétrich, Frederick J. BS 1957 F1  
3878 Corina Way; Palo Alto CA  
943030000  
Ford Aerospace & Communication; 3939  
Fabian Way; Palo Alto CA 943030000  
Sys Engr/Satellite Terminals

Diétrich, Randall G. BS 1970 F1  
3918 S Elm; Tempe AZ 852820000  
Salt River Project; P O Box 1980;  
Phoenix AZ 850010000 Lead Engr

Dillard, Homer E. Jr. BS 1956 F1  
12667 Lonsdale; Bridgeton MO 630440000  
McDonnell Douglas; Section Chief

Diller, Kirby L. BS 1980 F1  
1744 Cargill Dr; St Louis MO 631360000  
Emerson Electric; 8000 W Florissant Bx  
4100; St Louis MO 631360000

Dirnwidde, Blaine R. BS 1982 F1  
1153 Grouse St; El Canton CA 920200000

Dippel, Henry C. BS 1970 F1  
4318 Dar Lane; St Louis MO 631230000  
Schnucks Market; 7651 Clayton; St  
Louis MO 631170000 Mgr Trainee

Ditton, Vernon R. Jr. BS 1961 F1,  
MS 1972 M1  
1795 Banstead; Florissant MO 630330000  
McDonnell Douglas; P O Box 516; St  
Louis MO 631660000 Sr Engr

Ditty, Paul R. BS 1975 F1  
6 Weatherly Ct; Valley Center KS  
671470000  
Beech Aircraft; 9709 E Central;  
Wichita KS 672060000  
Electronic Test Engr

Dixon, Donald B. BS 1977 F1  
12270 Chesapeake Dr; Florissant MO  
630330000  
McDonnell Douglas; P O Box 516; St  
Louis MO 631660000 Elec Engr

Dixon, Michael M. BS 1977 F1  
4708 Reavis Brks Rd; St Louis MO  
631230000  
Union Electric; 18th & Gratiot; St  
Louis MO 631660000 Engr

Djebane, Abdelhamid MS 1979 F1  
Com About Ahmed El-Biar; Agiers  
Algeria 11

Djilger, Smail MS 1981 F1  
Current Address Needed

Dobrynski, Peter V. BS 1967 F1  
Current Address Needed

Dockey, Robert W. BS 1970 F1  
17715 Clydesdale Rd; Colorado Springs  
CO 809080000  
IRW Inc; 3450 N Nevada Ave; Colorado  
Springs CO 809070000 Engr Mgr

Dodd, Curtis W. BS 1963 F1, MS 1964 F1  
Rt 2 Box 294-D; Murphysboro IL  
629660000  
Southern Ill Univ; College of Engr &  
Tech; Carbondale IL 629010000  
Assoc Prof

Dodd, Thomas W. BS 1980 F1  
955 Topliff Circle; Palm Bay FL  
329050000  
McDonnell Douglas; P O Box 516; St  
Louis MO 631660000 Engr

Dodge, John H. BS 1973 F1  
4637 E 115th Cir; Denver CO 802330000  
IBM; P O Box 1900; Boulder CO  
803010000 Staff Engr

Dodson, Richard M. BS 1964 F1  
2817 Bosworth Ln; Bowie MD 207150000  
U S Army; 2800 Powder Mill Rd;  
Adelphia MD 207830000  
Secretary-Gen Staff

Doerr, Kenneth J. BS 1979 F1  
Sperry Rand-Sperry Flight Sys; P O Box  
21111; Phoenix AZ 850360000 Des Engr

Doerr, William F. III BS 1970 F1  
4140 N Parkside Dr; Hoffman Est IL  
601950000

Dollar, Jim A. BS 1968 F1  
5647 Bayview Dr; Seminole FL 335420000  
U S Navy; P O Box 12248; St Petersburg  
FL 337330000 Elec Engr

Dolson, George M. BS 1975 F1  
5923 Vicki John; Houston TX 70760000  
Univ of Texas-Houston; P O Box 20708;  
Houston TX 770580000

Dombrosky, Edward BS 1959 F1  
5813 Alpine; Indianapolis IN 462240000  
Indianapolis Water Co; 1220 Waterway  
Blvd; Indianapolis IN 462020000  
Sr Elec Engr

Donahue, James B. BS 1940 F1  
P O Box 5586; Sun City Center FL  
335700000  
Retired

- Donaldson, Albert L. BS 1970 F1  
12206 Waples Mill Road; Oakton VA  
221240000  
Computer Science Corp; 6565 Arlington  
Blvd; Falls Church VA 220460000  
Principal Engr
- Donaldson, Keith L. BS 1979 F1  
226 North Hill St; Greentown IN  
469360000  
General Motors-Delco; 700 E Firmin;  
Kokomo IN 469010000 Reliability Engr
- Donaldson, Randy E. BS 1978 F1  
3828 Folsom; St Louis MO 631100000
- Donaldson, Richard F. BS 1939 F1  
Deceased
- Donley, Mark Edward BS 1982 F1  
1274 Boise Apt #1; Idaho Falls ID  
834020000
- Donner, Richard J. MS 1974 F1  
2190 Avon Dr; Florissant MO 630330000
- McDonnell Douglas; P O Box 516; St  
Louis MO 631660000 Electronics Engr
- Donovan, Cornelius M. BS 1950 F1  
Current Address Needed
- Donovan, John M. MS 1978 F1  
5439 Adelaide Pl; E St Louis IL  
622040000  
McDonnell Douglas; P O Box 516; St  
Louis MO 631660000 Elec Engr
- Dooling, Thomas B. IV BS 1981 F1  
541 Locust Court; Webster Groves MO  
631190000  
McDonnell Douglas; Assoc Engr
- Dorlac, Michael F. BS 1975 F1  
U S Navy; Fleet Analysis Ctr; Corona  
CA 917200000 Electronics Engr
- Dorosti, Javad BS 1968 F1  
Current Address Needed
- Dorsch, John F. BS 1961 F1  
3523 Conestoga Way; Birmingham AL  
352430000  
South Central Bell;  
Rates & Economics Mgr
- Doss, Delano A. BS 1960 F1  
6605 Sabrosa Ct W; Ft Worth TX  
761330000  
General Dynamics; PO Box 748; Ft Worth  
TX 761010000 Sr Engr
- Dougherty, Thomas J. BS 1967 F1  
6435 Kinsey Place; St Louis MO  
631090000  
Picker Medical Products; 280 Campus  
Pl; Edison NJ 088170000 Reg Mgr
- Douglas, Freddie C. BS 1960 F1  
3144 Douglas Rd; Florissant MO  
630310000  
McDonnell Douglas; P O Box 516; St  
Louis MO 631660000 Section Chief
- Douglas, George W. BS 1930 F1  
Deceased
- Douglass, Clyde M. Jr. BS 1968 F1  
P O Box 911; Rochester MN 559030000  
St Marys Hospital; Mayo Clinic;  
Rochester MN 559010000  
Assist Dir Incl Engr
- Doutt, Thomas R. BS 1971 F1  
2303 Lamson Dr; Bloomington IL  
617010000  
GIE; 1312 E Empire; Bloomington IL  
617010000 Supv-Equip Engr
- Dowdy, Curtis L. BS 1981 F1  
828 Coakley Dr; San Jose CA 951170000  
Hewlett-Packard; 974 E Arques Ave;  
Sunnyvale CA 940860000 Dev Engr
- Dowdy, Mark Irving BS 1981 F1  
5067 Cote Brilliant; St Louis MO  
631130000
- Dowdy, Robert R. BS 1959 F1  
1801 Madison Ave; Burlington IA  
526010000  
General Electric; Proj Design Engr
- Dowdy, Ronald R. BS 1963 F1  
Current Address Needed
- Dowling, Neal B. BS 1951 F1  
121 W Highland Dr; Grafton WI  
530240000  
Centralab Inc -N Am Phillips Co; 5855 N  
Glen Park Rd; Milwaukee WI 532010000  
General Mgr Circuit Prod
- Downey, James C. BS 1970 F1  
407 Cottonwood Box 86; Patoka IN  
476660000  
AMP Inc; 200 Richland Crk Dr;  
Princeton IN 476710000 Prod Engr
- Downs, Jack S. BS 1949 F1  
1560 S Fairway; Springfield MO  
658040000  
Retired
- Dozier, K. Michael BS 1971 F1  
10221 149th NE; Granite Falls WA  
982520000  
Univ of Washington; Engr
- Drago, William A. Jr. BS 1949 F1  
Rt 2; Mason IA 523020000  
Square D Co; 3700 6th St. SW; Cedar  
Rapids IA 524040000 Develop Supv
- Dreinhoefler, Louis H. BS 1970 F1  
3335 Benden Dr; Murrysville PA  
156680000  
Alcoa; 7th St Rd Rt 780; Alcoa Center  
PA 150690000 Elec Engr Spec
- Dreisewerd, Douglas W. BS 1966 F1,  
MS 1972 F1  
2010 Baxter Rd; Chesterfield MO  
630170000  
McDonnell Douglas; P O Box 516; St  
Louis MO 631660000 Sect Chief-Elect
- Dreste, Fred F. Jr. BS 1943 F1, ELEC  
E 1960  
5001 E Weldon; Phoenix AZ 850180000  
Motorola; 8201 E McDowell Rd;  
Scottsdale AZ 852520000  
Sr Reliability Engr
- Drevelow, Paul J. BS 1959 F1  
Deceased
- Drewing, Frederick H. BS 1944 F1  
18061 Calcutta Dr; Chesterfield MO  
630170000  
Emerson Electric; 8000 W Florissant Bx  
4100; St Louis MO 631360000 Manager
- Driskell, Dennis J. BS 1967 F1  
General Delivery; Drury MO 656380000
- Droll, Paul W. BS 1962 F1  
2562 Kilpatrick Ct; San Ramon CA  
945830000  
Solkirk-Metalbestos; 1475 Old County  
Rd; Belmont CA 940020000  
Chief Research Engr
- Drummond, Floyd M. BS 1952 F1  
117 Kimberly Ct; Collinsville IL  
622340000  
U S Air Force; 375th Civil Engr Sqd;  
Scott AFB IL 622340000  
Chief Engr & Env Plan
- Druss, Raymond BS 1950 F1  
Deceased
- DuBois, William BS 1968 F1  
8813 Fox Park Dr; St Louis MO  
631260000  
AT&T-Southwestern Bell;  
Staff Manager
- Duckworth, Sam J. Jr. BS 1970 F1  
207 E 7th; Caruthersville MO 638300000  
North Pemiscot School; Eng Teacher
- Dueker, Amy L. BS 1975 F1  
See Robbins, Amy L.
- Duerr, Lorenz K. BS 1957 F1  
8 Oak Tree Ln; Schenectady NY  
123090000  
W I Linde & Assoc Inc;  
Chief-Elec Engr
- Dufner, Carl D. BS 1971 F1  
102 Cottonwood; Chatham IL 626290000  
Assoc Elec Coop; 6460 S 6th St Rd Bx  
3787; Springfield IL 627080000  
Dir-Engineering Dept

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- Duggins, Gary H. BS 1969 F1  
Davis Crk Rt Box 2C; W Plains MO  
657750000  
Southwest Truck Body Co; P O Box 196;  
W Plains MO 657750000  
Facilities Engr
- Duke, Calvin W. BS 1949 F1  
505 Grandin Ave; Severna Park MD  
211460000  
Arinc Research Corp; Sr Engr
- Duke, Richard A. BS 1973 F1  
416 Hughes; Marshalltown IA 501580000  
Monsanto-Fisher Controls; 205 S  
Center; Marshalltown IA 501580000  
Des Engr
- Dulatt, Patrick M. BS 1971 F1, MS 1982 M1  
288 Portwind Pl; Ballwin MO 630110000  
AT&T-Western Electric; 1111 Woods Mill  
Rd; Ballwin MO 630110000  
Installation Engr
- Dulin, Thomas E. BS 1961 F1  
4224 King Apt 189; Greenville TX  
754010000  
Recognition Equip Inc; P O Box 22307;  
Dallas TX 752220000
- Dull, Melvin J. BS 1958 F1  
612 Mary Ann; Ridgcrest CA 935550000
- Dulle, Richard G. BS 1980 F1  
5070 Towne Centre; St Louis MO  
631280000  
McDonnell Douglas; P O Box 516; St  
Louis MO 631660000
- Duncan, Douglas W. BS 1977 F1  
770 Riverdale Dr; Gladstone OR  
970270000  
Raytheon; Elec Engr
- Duncan, Kenneth J. BS 1970 F1  
1006 W Washington; Harrison AR  
726010000  
AR Power & Light; 9th & Louisiana;  
Little Rock AR 72030000 Dist Supv
- Duncan, Richard H. BS 1949 F1, MS 1951 D5  
2012 Rose Lane; Las Cruces NM  
880010000  
U S Army; White Sands Missile Range;  
White Sands NM 880020000  
Tech Dir & Chief Scientist
- Duncan, Robert C. BS 1967 F1  
4702 88th; Lubbock TX 794240000  
David G Halley & Co; P O Box 947;  
Lubbock TX 794080000 Sales Rep
- Duncan, Thomas L. BS 1969 F1, MS 1970 M1  
60440 Eleven MI; S Lyon MI 481780000  
Duncan Disposal Serv; Self Employed
- Duncil, Glenn K. BS 1950 F1  
1361 Elm Ave; Glendale CA 912010000  
Ralph M Parsons Co; 100 W Walnut St;  
Pasadena CA 911240000  
Principal Project Elec Engr
- Dung, Tran A. BS 1977 F1  
Current Address Needed
- Dunham, William J. BS 1963 F1  
1145 Millikin Pl NE; Warren OH  
444830000  
General Motors-Packard Elec;  
Mgr of Industrial Engr
- Dunigan, Gerald D. BS 1960 F1  
9164 E Chirco Pl; Tucson AZ 857100000  
Rockwell Intl-Collins Radio;
- Dunkmann, Steven W. BS 1972 F1  
2N210 Highland Ave; Glendale Hgts IL  
601390000  
Rockwell Intl-Collins Radio; 400  
Collins Rd; Cedar Rapids IA 524020000  
Des Engr
- Dunn, Vernon D. BS 1960 F1, MS 1972 F1  
1200 Sherbrook Rd; St Charles MO  
633010000  
McDonnell Douglas; 2600 N 3rd; St  
Charles MO 633010000 Group Engr
- Dunnvatanachit, Surin BS 1970 F1  
33 Tantaone, Suriwongse; Bangkok  
Thailand 72  
Bangkok Bank Ltd; 9 Suapa Rd; Bangkok  
Thailand 72 Asst Vice President
- Duoc, Nguyen Q. MS 1973 F1  
9538 Charlotte; Kansas City MO  
641310000
- Dupree, James F. BS 1969 F1  
34529 Birchwood; Westland MI 481850000  
Ford Motor Co; 20000 Rotunda; Dearborn  
MI 481240000 Res Engr A
- Durand, David S. BS 1975 F1  
5000 Arax CV; Austin TX 787310000  
TX Instruments; 12501 Research Blvd;  
Austin TX 787590000 Elec Engr
- Durand, Don K. BS 1968 F1, MS 1979 D7,  
MS 1981 M1  
2059 Parasol Dr; Chesterfield MO  
630170000  
McDonnell Douglas; P O Box 516; St  
Louis MO 631660000 Sr Engr
- Durbin, Ronald C. BS 1975 F1  
1536 Olmstead Pl; Dayton OH 454060000  
U S Air Force; Air Force Inst of  
Technology; Wrig Patterson AFB OH  
454330000 Captain
- Dustin, Albert J. Jr. BS 1958 F1  
741 Lamplight Lane; Hazelwood MO  
630420000  
McDonnell Douglas; P O Box 516; St  
Louis MO 631660000
- Duston, Robert W. BS 1969 F1  
2170 Willow Ridge Ln; Chesterfield MO  
630170000  
AT&T-Western Electric; 1111 Woods Mill  
Rd; Ballwin MO 630110000
- DuVall, Leif A. BS 1976 F1  
6038 Hartford; St Louis MO 631390000  
Vetal Labs; Supervisor
- Dvorsky, Michael A. BS 1981 F1  
Current Address Needed
- Dziedzic, Daniel A. BS 1983 F1  
P O Box 441; Williamsville IL  
626930000  
Shell Oil-Turris Coal; P O Box 21;  
Elkhart IL 626340000 Elec Engr
- Eagan, Thomas Eugene BS 1983 F1  
10500 Somerset; Detroit MI 482240000
- Eagleton, Rosemary A. BS 1981 F1  
Rt 3 126 Blue Lockspur; Hollywood MD  
206360000  
McDonnell Douglas; P O Box 516; St  
Louis MO 631660000 Assoc Engr
- Eaker, Thomas W. BS 1958 F1  
762 Sleepy Hollow Rd; Briarcliff Manor  
NY 105100000  
GIE; 730 Third Ave; New York NY  
100170000 Administrator
- Eason, Donald E. BS 1949 F1  
711 Chippendale Ct; St Louis MO  
631220000  
McDonnell Douglas; P O Box 516; St  
Louis MO 631660000 Group Engr
- Eason, James S. BS 1969 F1  
13130 Diamond Ridge Ct; St Louis MO  
631310000  
Anheuser-Busch; #1 Busch Place; St  
Louis MO 631180000 Sr Project Mgr
- East, Douglas R. BS 1966 F1  
4221 W Eisenhower Suite 4; Loveland CO  
805370000  
E R East Inc; 4221 W Eisenhower;  
Loveland CO 805370000 President
- Easterwood, Michael J. BS 1973 F1  
Rt 1; Russville IN 469790000  
General Motors-Delco; Sr Proj Engr
- Eaton, Jerry A. BS 1970 F1  
P O Box 5773; High Point NC 276220000  
St Louis Diecasting Corp; 201 Rock Ind  
Pk Rd; Bridgeton MO 630440000  
Elec Engr
- Eaton, Larry L. BS 1962 F1  
1346 Springhurst; Florissant MO  
630310000  
McDonnell Douglas; P O Box 516; St  
Louis MO 631660000 Sr Design Engr