A total of 47 people had faculty appointments in the ABE department between 1997 and 2009. Of these, 15 joined the department during that period, 6 continued their faculty appointments and 18 departed, either to accept new assignments or to retire. Also, 8 people had paid appointments in other departments or institutions but were granted courtesy appointments in the ABE department. The changes in faculty appointments were described in Chapter 2, Changing of the Guard. A complete list of faculty members is given in the appendix. The purpose of Chapter 8 is to provide a personal profile of each of the 18 faculty members who left the department between 1997 and 2009. Those profiles are given below.

**Paul Benson**  
1978–2002

Dr. Paul Benson was raised on a farm near Morris, Illinois. Benson received his bachelor’s degree in Agricultural Mechanization from the University of Illinois. He operated a grain and dairy farm until 1975. During that time, he taught science at Morris Junior High School and vocational agriculture in the Morris Community High School.
Benson attended Southern Illinois University and earned his master’s in Agricultural Economics. He returned to the U of I to earn a Ph.D. in Vocational Education.

Paul began his career at the U of I as a Research and Teaching Assistant in Agricultural Education in 1978. He joined the Department of Agricultural Engineering as a Visiting Assistant Professor and Extension Specialist. Benson worked with Phil Buriak to build the Technical Systems Management program into one of the best in the nation. He converted the two courses for which he was responsible from basic skills to a concentration of current technology.

Benson served as co-advisor for the Illini Agricultural Mechanization Club during his entire career. His dedication to his students earned him the Department Teaching Excellence Award in 1989, 1993 and 2002. His dedication to teaching youth was demonstrated in other activities as well. He received the FFA Honorary State Farmers Degree for his contributions to youth in FFA. He hosted electrical workshops for 4-H youth throughout Illinois each summer and coordinated 4-H projects for state and county fairs. Benson served on many other state committees, as well as college and department committees.

Benson was appointed Executive Director of the Illinois Electric Council (IEC) in 1988 and served in that capacity until his retirement. Benson received the IEC Merit Award for his contributions in 1991, and in 1999, he received the Professional Staff Award for Sustained Excellence from the College of ACES for his contributions to the use of electric energy through the IEC.

Benson retired from the Department in July of 2002.

**Stuart J. Birrell**
1996 – 1998

Dr. Stuart Birrell received his bachelor’s degree in Agricultural Engineering from the University of Natal, South Africa in 1984. Birrell came to the University of Illinois in 1985 and earned two degrees in Agricultural Engineering; his master’s in 1987 and his Ph.D. in 1995.

During this time, Birrell worked as a Graduate Research Assistant for the Department of Agricultural Engineering, where he taught agri-
cultural engineering and agricultural mechanization courses in power and machinery; conducted research on distillation of soybean oil to produce an alternative diesel fuel; and ran engine performance tests of distillates. At the same time, Birrell was employed by Hitachi, Ltd., in Tokyo, Japan as a Visiting Researcher in the Hitachi Central Research Library. In this position, Birrell conducted research on ion selective membranes for the development of a nitrate ion selective field effect transistor sensor resulting in the development of a system for real-time soil nutrient sensing at the University of Illinois. During this time, Birrell was recognized with the Departmental Teaching Assistant Award for excellence in teaching (1988) and the Campus Recognition for Excellence in Teaching award from the University of Illinois (1991).

Upon graduation, Birrell was employed by the University of Missouri as a Research Assistant Professor in the Agricultural Engineering Department. While at Missouri, Birrell participated in the planning and implementation of site specific crop management research; worked extensively with yield monitors and Global Positioning System technology; developed a combine mounted corn population sensor; and utilized geostatistics and other methods to analyze the spatial variation of crop yield and soil parameters.

Birrell returned to the University of Illinois as a Visiting Assistant Professor in 1996. He worked with Dr. John Hummel on a research project to develop a real-time soil nutrient analysis system for precision fertilizer application, and he taught the agricultural engineering course on instrumentation and measurements.

Birrell is currently a member of the faculty in the Department of Agricultural and Biosystems Engineering at Iowa State University, where he teaches undergraduate courses in Agricultural and Biosystems Engineering and Agricultural Systems Technology. Dr. Birrell's research is concentrated in two areas; the development of sensors and controls that can be applied in advanced machinery control and in precision agriculture; and harvest technologies and biomass harvesting and logistics.
Dr. Loren E. Bode received his bachelor’s degree in Agricultural Engineering from the University of Missouri-Columbia in 1965. He completed his master’s in 1967 and his Ph.D in 1972 from the University of Missouri while working as an ARS Research Engineer. In 1972, Dr. Bode was transferred to Stoneville, Mississippi to initiate an application technology project at the new USDA Federal Research Center. Bode joined the Agricultural Engineering Department at the University of Illinois in September of 1973 with a research/extension appointment to work on the pesticide application portion of power and machinery extension.

Bode’s research, teaching and extension activities relating to equipment for applying agricultural chemicals have made him an acknowledged national authority on pesticide application methods and equipment. Highlights of Bode’s career include development of techniques for measuring pesticide drift and measuring the effectiveness of equipment used for incorporating pesticides into the soil. He designed a portable spray “patternator” table which is still widely used to teach calibration, selection, and use of spray nozzles and additives. Loren has written more than 200 publications regarding his research findings, which have been recognized with many awards and honors.

Examples of Bode’s international reputation include invitations to speak and to present papers in Brazil, Japan, England and Denmark. He has received numerous awards and honors, including the College of ACES Senior Faculty Award for Excellence in 1990; the MACA Educator’s Award in 1991; the National ASAE Young Extension Worker Award in 1993; the College of ACES Funk Award in 1993; and the Ben and Georgeann Jones Excellence in Teaching Award in 2008. Bode has served in a variety of positions of leadership in the (now) American Society of Agricultural and Biological Engineering and was elected as a Fellow in 1992.

Bode became the fifth Head of the Department in 1993 and served in that role through December 2004. Many changes occurred during his tenure with many new faculty hires, being rated the number one Department in the nation, and changing the name of the Department
of Agricultural and Biological Engineering.

Bode retired from the Department in May of 2008.

Douglas Bosworth
1996–2004

Douglas Bosworth was born in Goldfield, Iowa, and received his Bachelor’s degree in Agricultural Engineering from Iowa State University in 1962. In 1964 he received a Master’s degree in Agricultural Engineering with a minor in Theoretical and Applied Mechanics from the University of Illinois.

Bosworth began his engineering career at Deere and Company in 1959. For the next 35 years, Bosworth served the company in a variety of managerial positions, including Manager, Test Engineering; Reliability Manager; Division Engineer for Tillage; Manager, Manufacturing Engineering; Works Manager; Manufacturing Manager; Manager, Engineering Test and Reliability; and Manager, Business Opportunities.

During those years, Bosworth was an active member of the American Society of Agricultural & Biological Engineers (ASABE), where he served as President Elect from 1991 to 1992 and as President from 1992 to 1993.

Bosworth also served on the Engineering Accreditation Commission (EAC) of the Accreditation Board for Engineering and Technology (ABET) from 1985 to 1990 and led ten engineering accreditation teams. He was also a Program Evaluator for fifteen engineering programs beginning in 1976. He used that experience to help the College of Aces conduct self-evaluation and the College of Engineering prepare for ABET reviews.

Bosworth retired from Deere and Company in 1994. He served as President of the Illinois Technology Center at Savoy from 1995 through 1997. He was also the Administrative Principal of WorkSpan, Inc. from 1994 through 2000.

Bosworth joined the faculty of the Department of Agricultural & Biological Engineering at the University of Illinois in 1996. As Adjunct Professor, Bosworth taught the senior capstone engineering design class, which became a model for other departments and colleges of how to utilize the product development team process used in in-
Industry to teach design. Under his tutelage, students tackled real-world problems proposed by industry partners, and presented their eventual products and solutions to the industry partner in the same manner as an internal design team. The students’ designs and solutions were often adopted by the industry partners.

Bosworth retired from the Department in May of 2004.

**Phil Buriak**
1988–2004

Dr. Phil Buriak came to the Department in 1988 as an associate professor. Buriak earned a bachelor’s in Biology/Secondary Education at Pennsylvania State in 1972 and a master’s in Agricultural Education in 1980. He earned a Ph.D. in Agricultural Education from The Ohio State University in 1982. Prior to his time at U of I, he taught at Illinois State and at Mississippi State.

Buriak was recruited by Carroll Goering and Roscoe Pershing to revitalize the Agricultural Mechanization program. When he joined the staff, enrollment in the program had fallen to fewer than 25 majors. Buriak transformed the program to a physics-based curriculum focused on the management of agricultural and technical systems and almost quadrupled enrollment. He also oversaw the name change from Agricultural Mechanization to Technical Systems Management.

During Buriak’s tenure at the University, his legacy was his rapport with his students and his ability to communicate to them his passion for excellence. Beginning in 1986, Buriak won many awards for teaching, including the Teaching Award of Merit from the National Association of College Teachers of Agriculture in 1986; the Teaching Excellence Award from the U of I Department of Agricultural Engineering in 1989, 1992, and 1994; the Teaching Award of Excellence from the U of I College of Agricultural, Consumer and Environmental Sciences in 1997; the Senior Teaching Award of Excellence from the U of I College of Agricultural, Consumer and Environmental Sciences in 1999; the Undergraduate Teaching Award of Excellence from U of I in 1999; and the National Award for Excellence in College and University Teaching from the U.S. Department of Agriculture in 1999.

Buriak served as advisor to the Technical Systems Management stu-
dent organization and under his guidance, the student club was ranked number one 13 times in 15 years. Buriak was very active in the American Society of Agricultural and Biological Engineers and served on a variety of education and technical management committees. He is a life member of the American Association of Agricultural Education and served several years as editor of the Journal of Agricultural Education.

Buriak was a professor in the Department from 1988 until his retirement in 2007.

Les Christianson
1984-2007

Dr. Les Christianson attended South Dakota State University and received a bachelor’s degree in Agricultural Engineering in 1974 and a master’s in 1976. He then attended the University of Missouri, Columbia, where he received his Ph.D. in the same subject.

While earning his Ph.D., Christianson served as an instructor at the University of Missouri from 1976 until his graduation in 1978. He then took a position as an Assistant Professor in the College of Engineering at South Dakota State University. He remained at South Dakota until October of 1985, moving into the position of Associate Professor and serving as Associate Dean of the College.

In October of 1985, Christianson joined the faculty of the Department of Agricultural Engineering at the University of Illinois as an Associate Professor. He later served as Professor in the Department as well as in the Bioengineering Department of the College of Engineering. In 1982, he became the Director of the Bioenvironmental Engineering Research Laboratory.

Throughout his engineering career, Christianson has worked as an engineering consultant and has been the co-owner of a number of businesses, including the Illinois Technology Center (1994-2003); Plastic Designs, Inc. (2003-2008); Green Valley Manufacturing (2003-present); WorldWide BioEnergy (2007-present); and Skyview Farms (2008-present), where he owns and manages 240 acres of farmland and raises dairy steers and purebred sheep.

Christianson has been a member of the American Society of Ag-
Carroll E. Goering was raised on a farm near Platte Center, Nebraska. After serving two years in the US Army including service in Korea, he graduated from the University of Nebraska with a BS in Agricultural Engineering in 1959. He worked for two years on advanced implement design for International Harvester Company in Burr Ridge, Illinois before entering graduate school at Iowa State University. There he earned an MSAE and a dual major PhD degree, with majors in Agricultural Engineering and Engineering Mechanics.

Upon graduation in 1965, Goering joined the Agricultural Engineering faculty at the University of Missouri-Columbia, doing teaching and research. His research there was on vehicle automation and on chemical application technology. While at Missouri, Goering was awarded a distinguished faculty award. He spent the academic year, 1972-73, on sabbatical leave in the Agricultural Engineering department at the University of Illinois.

In 1977, Goering joined the Agricultural Engineering faculty at the University of Illinois on a teaching and research appointment, filling a vacancy created by the death of Jay Weber. Goering was leader of the Off-Road Equipment Engineering area from 1985 until his retirement in 1999. He also chaired the department graduate committee during that time, overseeing the graduate student enrollment growth from 25 to 50 students. His research areas at Illinois were in bio-fuels, mechatronics, and precision agriculture. Two of his research publications won ASA- BE outstanding paper awards and two others won honorable mention.
Goering enjoyed teaching and was on the incomplete list of excellent teachers 24 times. He was awarded the senior teaching excellence award from the College of ACES and the Everitt award for teaching excellence from the College of Engineering. He was a member of the ACES Academy of Teaching Excellence from 1995 to 1999. He was also awarded a Funk Award by the College of ACES. Goering spent all of 1984 on sabbatical leave in South Africa, where he instructed the South Africans on how to measure energy release rates from the fuel in a running engine. Goering was author or coauthor of three textbooks, Engine and Tractor Power, Engineering Principles of Agricultural Machines, and Off-Road Vehicle Engineering Principles. In addition to advising MS and PhD candidates, Goering advised numerous undergraduate students on their research projects. Nine of these undergraduate theses grew into refereed publications in national journals.

Goering was heavily involved in ASABE activities, including twice chairing the Power and Machinery division, serving on the ASAE board of directors and on the board of the ASABE Foundation. While chairing the Power and Machinery division, he led the development of the Agricultural Equipment Technology (AETC) series that still continues annually. Nine times, he was awarded presidential citations for distinguished service to the society. One of these was for helping the society implement an electronic library. Another was for serving on the 3-member committee of the board of directors that rewrote the constitution to decentralize the society. Another was for setting up a system for periodic dues review and for setting appropriate dues rates. The other six citations were for authoring new or revised textbooks. Goering was also awarded the Massey-Ferguson Educational Medal and the McCormick-Case Gold Medal and was elected an ASABE Fellow.

The BioSystems Engineering Department at the University of Nebraska elected Goering to their department hall of fame in 2002. Goering had graduated from that department in 1959. Goering retired in 1999. He and his wife, Carol, have two daughters, a son and four grandchildren.
Shufeng Han
2000 – 2002

Shufeng Han received both his bachelor’s (1982) and his master’s (1985) degrees in Agricultural Mechanization from Zhejiang University in China. He was an instructor in Agricultural Mechanization at Zhejiang University until 1989, when he came to the University of Illinois to earn his Ph.D. in Agricultural Engineering.

Han first worked in the Department as a Graduate Research Assistant while working toward his degree. Upon graduation in 1993, he took a position as a Research Associate at Washington State University. Han returned to the U of I in 2000 as an Assistant Professor in Agricultural Engineering.

In his time with the Department, Han established a strong research program in the areas of precision agriculture, variable rate application technologies and off-road vehicle automation. Han organized and co-chaired the first Illinois-Missouri Precision Agriculture Conference and gave numerous presentations to Extension educators, grower associations and farmers to promote precision agriculture in Illinois. He also managed the Agricultural Engineering Research Farm and the Applied Machine Vision laboratory.

Han left the U of I in 2002 to take a position as an Engineering Scientist with John Deere Intelligent Vehicle Systems, where he obtained eight patents (out of a total of 15 patents) and received two AgDem Innovation and Collaboration Awards (the highest engineering award within the John Deere Agricultural Division) in the last eight years. Han is currently a Senior Staff Engineer at John Deere Product Engineering Center. Han is also a Collaborator Associate Professor at Iowa State University.

Han has been a member of the American Society of Agricultural and Biological Engineers since 1995, and has served the ASABE in a number of offices, including Vice Chair of the Iowa Section and Vice Chair of the Illinois Section.
Dr. Michael Hirschi earned both his bachelor's and master’s in Agricultural Engineering from the University of Minnesota in 1978 and 1980, respectively. He went on to earn a Ph.D. in Agricultural Engineering from the University of Kentucky in 1985. Upon graduation, he joined the faculty of the Department of Agricultural and Biological Engineering at the University of Illinois as an assistant professor, working also as a research associate for the Army Corps of Engineers as part of his summer appointments.

Hirschi’s time with the Department spanned 22 years and he served in a variety of positions over that period, including section leader in the Soil and Water Division beginning in 1996 and as Associate Department Head from 2006 to 2008. Hirschi was a valued teacher; his course, Soil and Water Management Systems, was highly rated by students, and he was voted to the “Incomplete List of Teachers Ranked as Excellent by Their Students” each semester the course was taught. He was considered an outstanding advisor, working with and advising students in Agricultural Engineering and Technical Systems Management in both the College of ACES and the College of Engineering.

Hirschi’s primary contribution was in Extension, where he served as an Extension Specialist for 22 years. He held a variety of leadership roles, including Acting Assistant Director for Agricultural and Natural Resources for the Cooperative Extension Service, Interim Associate Director for the Cooperative Extension Service, leader of the Water Quality Strategic Research Initiative for the Illinois Council on Food and Agricultural Research, and Water Quality Program Coordinator for UI Extension.

His contributions to Extension have been significant, particularly in the areas of water quality improvement and soil conservation practices. Hirschi emphasized outreach and the need to bring campus research to those who can use it to improve their lives, the lives of those around them, and the environment. Hirschi’s work, in particular on the Great Lakes Region Water Quality Leadership Team, has had a major impact on Extension programming in soil and water related areas in Illinois, the Great Lakes Region and the nation.
Hirschi has been a member of the American Society of Agricultural and Biological Engineers since 1977. As such he has served on numerous committees and in various leadership positions. Hirschi has earned numerous awards throughout his career, including the Young Faculty Award for Excellence in 1995, the Karl Gardner Outstanding Undergraduate Advising Award in 2003, and the Senior Faculty Award for Excellence in Extension in 2007.

In 2007, Hirschi took a position in the College of Engineering as Interim Assistant Dean for Academic Programs; he was later appointed Assistant Dean for Undergraduate Programs in 2008.

**John W. Hummel**

1976 – 2000

John Hummel was raised on a dairy and crop farm near Grantsville, Maryland. He was active in 4-H and FFA programs, and won the Maryland State FFA Public Speaking Contest in 1958. He earned his bachelor’s and master’s degrees from the University of Maryland, and then entered graduate school at the University of Illinois in 1966. After completing his Ph.D. in 1970, he became an assistant professor at the University of Maryland with teaching and research responsibilities. He was promoted to associate professor in 1973, and became a registered professional engineer in Maryland in 1976. In 1976, he returned to the University of Illinois to work for the Agricultural Research Service (ARS) of the USDA. In 1997, Hummel served a 2-month assignment as National Program Leader (Acting) for Engineering/Energy Programs on the ARS National Program Staff in Beltsville MD. In 2000, the USDA transferred Hummel to the Cropping Systems and Water Quality Research Unit (CSWQRU) at the University of Missouri and he served as Acting Research Leader of the CSWQRU (1/03 – 6/03).

Initially, Hummel’s research for the ARS was on soybean production technology, with emphasis on soybean harvesting. He and his coworkers developed innovative methods for reducing soybean harvesting losses. They created a laboratory stand that permitted taking high-speed movies of soybean headers as a means of detecting loss mechanisms. This led to development of an impact cutter that permitted higher harvest-
ing speeds without increased loss. Later, Hummel’s research evolved into the new field of precision agriculture. Hummel and his students focused on sensor development, a critical need for precision agriculture. They developed sensors to sense soil organic matter, soil nitrates and corn plant populations. At Columbia, Missouri, he continued his research on precision agriculture,

Hummel’s career involved working with numerous students, initially at the University of Maryland, where he served as a part-time instructor while doing graduate work. He was later employed as a full-time faculty member. When he came to the University of Illinois as a USDA employee in 1976, he received a courtesy appointment as an associate professor. He was promoted to professor in 1987. He received an appointment to the graduate faculty that enabled him to advise master’s and Ph.D. students. He also advised numerous students for their undergraduate thesis research. In 1996, he was the first winner of the ACES Service Recognition award that recognized outstanding affiliates of the college. Hummel became a member of the Doctoral Faculty of the University of Missouri in 2002, enabling him to advise doctoral candidates there,

Hummel became active in ASAE (now ASABE) early in his career, winning the National Student Paper Contest in 1964. He served on numerous committees, and chaired the chemical application, the cultural practices equipment, the precision agriculture, and the power and machinery program committees. He served for one year as chair of the power and machinery division. In 1989-90, he chaired the society-wide committee that planned annual meetings. In 1982, he was the sole ANSI representative at an ISO meeting held in Europe to negotiate new machinery standards. From 1983 to 1992, he represented the U.S. on the Technical Advisory Group on international standardization. He served on the Board of Trustees of ASAE, and in 2000, he was elected as an ASAE Fellow.

Hummel retired from the USDA in 2004. In 2004, Hummel became Co-Editor-in-Chief of the Computers and Electronics in Agriculture journal, coordinating the editing and publishing of over 250 manuscripts from around the world during a 3-year period.
Dr. Bruce Litchfield earned his bachelor’s degree in Mechanical Engineering from the University of Illinois in 1978. He continued his education at Purdue University in West Lafayette, Indiana, earning a master’s degree in Food Process Engineering in 1984 and a Ph.D. in Food and Biochemical Engineering in 1986.

Litchfield began his engineering career as a Process and Project Engineer at General Foods Corporation from 1978 until 1982. After completion of his degrees at Purdue, Litchfield returned to the U of I as an assistant professor in the Department of Agricultural Engineering in 1986. He advanced to full professor, and during this time, Litchfield played a key role in the development of the Food and Bioprocess Engineering curricula for the Department. Together with engineering executives from several food companies as well as academic personnel, Litchfield developed three courses that were central to the Food and Bioprocess Engineering program; Engineering Properties of Foods (now ABE 493), Food and Bioprocess Engineering Design, and Humanity in the Food Web.

Litchfield earned a number of honors and awards for his work in the Department and the College, including the Outstanding Instructor Award (1989-90); the Young Faculty Award for Excellence in Teaching from the College of Agriculture (1992); and the Faculty Award for Excellence in Research from the College of ACES (1996).

In 1994, Litchfield founded and directed a faculty development program, the Academy for Excellence in Engineering Education that has become a model for excellence. The purpose of the program was to introduce new faculty to new and effective ways to teach at the college level. Litchfield’s work with this program was recognized in 1997, when he was named the first recipient of the Collins Award for Innovative Teaching. That same year, Litchfield also received the prestigious Harriet and Charles Luckman Undergraduate Distinguished Teaching Award.

In 1999, Litchfield accepted a position with the College of Engineering as an Assistant Dean for Engineering Academic Programs. Litchfield has been involved in a number of activities in the COE, including
the Engineering Emotional Intelligence Course (where he developed and co-taught an interdisciplinary personal development course for engineering students); International Programs in Engineering (serving as director of global study abroad and collaborative programs for more than 5400 undergraduate engineering students); Illinois Foundry for Innovation in Engineering Education (director of first-year experience and a faculty fellow); and the Learning in Community Program (where he developed and directed campus-wide service learning and community engagement programs). Litchfield was also given the Distinguished Teacher/Scholar Award for instructional excellence and leadership and was funded to direct a campus-wide effort in civic engagement (2003-2004).

Recent awards include recognition as an Engineering Council Outstanding Advisor, the YMCA J. Frederick Miller Award and the American Society for Engineering Education Outstanding Campus Representative of the Illinois-Indiana Section.

J. Kent Mitchell
1964 – 2000

Dr. J. Kent Mitchell had a distinguished career in the Department of Agricultural Engineering at the University of Illinois for 36 years. Mitchell was born in Aurora, Illinois, but raised in Oskaloosa, Iowa. He earned his bachelor’s degree in 1957 and his master’s in 1964, both in Agricultural Engineering from Iowa State University. He earned his Ph.D. in Agricultural Engineering at the University of Illinois in 1970. In the years between his bachelor’s and his master’s, Kent was an Agricultural Engineer with the USDA Soil Conservation Service in Iowa, and served as a NIKE Unit Commander in the U.S. Army in Irwin, Pennsylvania.

Mitchell’s research in soil and water included the collection and compilation of 33 years of continuous hydrologic monitoring data from four small mild slope Allerton Watersheds for use in developing models to describe the hydrology of those terrains; soil erosion studies on various cropping practices using a rainfall simulator resulting in 500 plot events for soil erosion data analyses; and the collection of data from the Little Vermilion River Watershed Water Quality Project resulting
in data from 15 stations over 12 years (until 2003) for use in models to properly describe the hydrology of depressional tile-drained areas.

Mitchell used sabbaticals to develop a national and international perspective of soil and water resource engineering. He was Visiting Assistant Professor, Department of Agricultural Engineering, University of Wisconsin, Madison; Visiting Professor, Department of Agricultural Engineering, University of Natal, Pietermaritzburg, South Africa; Visiting Scientist, USDA National Sedimentation Laboratory, Oxford, Mississippi, and Visiting Research Professor, Center for Computational Hydroscience and Engineering, University of Mississippi, Oxford, Mississippi; and Visiting Professor, Department of Hydraulic Structures, Warsaw Agricultural University, Warsaw, Poland. He was also, an invited speaker at conferences in Belgium, England, Austria, Korea, Thailand, China, Poland, and Australia.

Teaching was a highlight for Mitchell at the University, and he considered it his first priority. Mitchell earned numerous teaching awards during his career at the U of I, including the Teaching Excellence Award from the Department of Agricultural Engineering in 1986 and 2000; the Alpha Zeta Outstanding Instructor from the College of Agriculture in 1986; the Everitt Award for Teaching Excellence from the College of Engineering in 1987; and the Senior Faculty Award for Excellence in Teaching from the College of Agriculture in 1989. He was a member of the Academy of Teaching Excellence in the College of Agriculture in 1989 and 1992.

His teaching included service as Educational Advisor to the Illinois Land Improvement Contractors Association near the end of his career and into retirement.

In other career highlights, Kent received the Paul A. Funk Recognition Award in 1994 from the College of Agriculture and was awarded the grade of Fellow in the American Society of Agricultural Engineers in 2000. Mitchell retired from the Department on March 1, 2000.

Mitchell married Marlene Reynolds in 1956 and they have three sons and one daughter. He has been active in Church committees; and Boy Scout activities, having received the Silver Beaver award.
Marvin R. Paulsen
1975-2006

Dr. Marvin R. Paulsen was born in Minden, Nebraska and earned a bachelor’s and a master’s degree in Agricultural Engineering from the University of Nebraska in 1969 and 1972, respectively. Paulsen then attended Oklahoma State University, where he received a Ph.D. in Agricultural Engineering in 1975. Upon graduation, Dr. Paulsen joined the Department of Agricultural Engineering at the University of Illinois.

Paulsen’s research focused on grain quality – understanding what degrades grain quality and how to protect against that degradation. Paulsen was involved extensively in grain quality measurements. His research on the breakage of corn during export shipment made significant contributions to the state of Illinois and to the U.S. grain trade. His results provided information used by importers, merchandisers and corn geneticists to improve handling methods and corn characteristics.

Paulsen was also involved with the use of machine vision to detect grain kernel defects and later with near-infrared reflectance/transmission (NIR/NIT) spectroscopy to predict starch extractability of corn samples. His research in the use of NIR/NIT to measure corn starch extractability and other quality traits, proved of great benefit to the corn merchandising industry.

Professor Paulsen developed an international expertise in grain quality measurements and effects of drying, handling and transport on quality changes. He has given numerous presentations on U.S. grain quality in Europe, China, Russia, and for the U.S. Grains Council for conferences in Japan, Columbia, Peru, and Mexico. In 2002 he was elected to Fellow in ASABE and in 2005 he received the Paul A. Funk Recognition Award from the College of ACES.

Paulsen became Division Leader of Food and Bioprocess Engineering in May of 1989, serving until July of 2006. He was appointed Graduate Program Director for the Department from 1994 to 1996 and 1997 to 2006. He created the first Graduate Program Handbook in 1999 and revised it each year.

Paulsen served as the Associate Head of the Department from August 2000 until his retirement in July of 2006.
QIN ZHANG  
1997-2009

Dr. Qin Zhang earned his bachelor's degree in Mechanical Engineering from Zhejiang Agricultural University in China in 1982 and received his master’s in Agricultural Engineering from the University of Idaho in 1988. He went on to earn a Ph.D. in Agricultural Engineering from the University of Illinois in 1991. Following a two year Post-Doctoral appointment (1992-94) in the Department, he was employed by Caterpillar Inc. in Peoria, Illinois as a Senior Research Engineer from 1994 to 1997. The Agricultural Engineering Department was able to attract Dr. Zhang back into the academic community in August 1997 as an Assistant Professor in Off-Road Equipment Engineering. He was promoted to Associate Professor in 2002 and Professor in 2009.

During Zhang’s twelve years at the University of Illinois he developed an internationally recognized program in the areas of mobile mechatronics and agricultural infotronics. He was invited to visit over 20 foreign universities and research institutions, and hosted 60 groups of international visitors from more than a dozen countries for academic exchanges. In addition to his many research contributions including a dozen patents, Zhang published a textbook for the study of hydraulic systems. Zhang served as Editor of three major international proceedings on Automation Technology and as Associate Editor of two professional journals. He received several outstanding paper awards, including the Best Paper of the Decade Award in 1995 from the Transactions of Agricultural Engineering (China). Teaching awards include the coveted Collins Award for Innovative Teaching presented by the College of Engineering at the University of Illinois (1999).

Zhang holds Adjunct Professor titles at three top ranked universities in China and is a JSPS Fellow in the Japanese Society for the Promotion of Science. He is active in the American Society of Agricultural and Biological Engineers (ASABE), the Society of Automotive Engineers (SAE), the National Fluid Power Association (NFPA) and served on the Board of the Association of Overseas Chinese Agricultural, Biological, and Food Engineers (AOC).

Zhang’s reputation can be summarized from a 2008 cover story in
Farm Industry News in which the editors included Zhang in an A to Z list of people, technology, and trends that will change agriculture in the future. The authors acknowledged his accomplishments with the statement that “Qin Zhang’s name is synonymous with mechatronics, the science that integrates ‘mechanics’ and ‘electronics’ to create off-road machinery with a ‘brain.’”

In 2009, Dr. Zhang accepted a position at Washington State University to develop a Center for Automated Agriculture with an emphasis on high value specialty crops.

*JOHN F. REID*

**1986–2000**

Dr. John F. Reid was born and raised in Staunton, Virginia. He earned his bachelor’s and master’s degrees in Agricultural Engineering from Virginia Polytechnic Institute and State University (VPI&SU). While at VPI&SU, he was employed as a coop education student by the Shenandoah Valley Electric Cooperative. Reid’s graduate education focused on automation and controls applied to agricultural and biological systems. He earned his Ph.D. from Texas A&M University where he and his advisor developed a research program in machine vision for agricultural applications including vehicle guidance. He then joined the Agricultural Engineering department at the University of Illinois in 1986.

While at the U of I, Reid started a research program on development of machine vision sensors for use in agricultural and biological applications. This research was initially supported through Hatch funding to characterize corn plant growth and development to support mechanistic plant growth models.

A major collaboration between Reid, Dr. Bruce Litchfield, their graduate students, and other researchers led to the integration of vision-based sensing for the control and optimization of fermentation processes. Vision-based management and control of tissue culture systems was a topic Reid continued with Dr. Mary Ann Lila in the College of Agriculture.

Reid’s research interests took him to the University of Natal in South Africa in the summers of 1990 and 1992 where he worked with
Dr. Alan Hansen and others to establish a machine vision laboratory for this university. Research out of this effort focused on applications of vision sensing to characterize wear on engine parts and fuel injectors and applications to assess the volume and size distribution of logs at weigh bridges for forest logging operations.

Reid, his graduate students, and other research colleagues used machine vision in various applications including grain quality evaluation, selective harvesting of asparagus, inspection of food packages for seal damage, and automatic detection of microbial contaminants in water samples. A U.S. patent was granted based on the research for water contaminant detection.

In 1996, he used a spring-semester sabbatical with Case-IH (and later CNH) to further develop his expertise in automation for the agricultural equipment industry. During this time, Reid's research returned to the use of machine vision in connection with automatic guidance of agricultural vehicles as part of a broader look at robotics and automation in production agriculture. The relationship with CNH continued through an on-going research contract between Case and the University of Illinois that included research in robotics and automation of agricultural vehicles and the development of multi-spectral image sensors for real-time site-specific control of corn nitrogen requirements.

During this same time, Dr. Reid and Dr. Noboru Noguchi of Hokkaido University, along with Dr. Qin Zhang, formed a significant research collaboration that resulted in a global research program in robotics and automation in agriculture including the development of autonomous tractors, and automated guidance for combine harvesters. Dr. Reid went on to win a Japanese Society for the Promotion of Science Fellow award that enabled he and his family to spend 9 weeks in Japan in 1998. During this time Reid further expanded his research interests into robotics and automation as a potential systems solution for agricultural productivity.

While Dr. Reid was deeply involved in research, a strong mentoring relationship with Dr. Loren Bode helped develop Reid into a significant contributor to student activities through teaching and advising. Dr. Reid developed a number of new courses for the department that brought novel technologies into the classroom including machine vision sensing, robotics in agriculture, finite element methods in engineering, and boundary element analysis methods. In 1997, he won the
Karl Gardener award from the College of ACES for innovative advising of students. From 1997 to 2000, Reid was a member of the Teaching Academy of Excellence in the College of ACES.

This blend of innovative teaching, collaborative research, and service to the University and professional societies led to a well-rounded career for Dr. Reid that provided many great and memorable experiences. For the 1995–96 academic year, Reid was one of 21 faculty members on the UIUC campus to win appointment as a University Scholar. Reid was promoted to Associate Professor in 1992 and to full Professor in 1997.

In December, 2000, Reid left the department to accept a position as Manager of Technology Development Support at the John Deere Technical Center. At the time of his departure, he was serving as the leader of the Off-Road Equipment Engineering (OREE) area of the department. Although he moved to the Quad Cities, he was granted a zero-time appointment as an adjunct professor in the ABE department which enabled him to continue to mentor and support his remaining commitments towards the completion of several graduate students. In 2002, Reid became the Manager of Field Robotics at John Deere responsible for the global innovation strategy in robotics and automation. The R–Gator, developed for military applications, was one of the first products commercialized from this effort. In 2006, Reid became the Director, Product Technology and Innovation at John Deere’s Moline Technology Innovation Center, where he and colleagues in Advanced Marketing lead and execute the process for new business opportunity identification and execution. Reid is also responsible for the Global Technology Innovation Network at John Deere that identifies and develops the technology strategy that guides the building of capabilities to support John Deere’s current and future business needs. This has resulted in the expansion of John Deere’s R&D footprint to Europe and Asia.

Reid continues to be active professionally. He is a past Board Member of ASABE and was named ASABE Fellow in 2005. In 2003, Reid became a full member of the Club of Bologna. This club, with 92 members world-wide, has the goal of convening the highest international experts on mechanization to discuss subjects of preeminent importance for the development of agricultural machinery in various countries. Reid has a deep and active record of published work including 18 patents at this time.
Gerald Riskowski
1986–2001

Dr. Gerald Riskowski earned both his bachelor’s and master’s in Agricultural Engineering from the University of Nebraska in 1974 and 1976, respectively. After four years as a design engineer with Lester’s and Wick Building Systems (in Minnesota and Wisconsin) Riskowski took a position as an instructor and Extension engineer at Iowa State University in 1980. He went on to earn his Ph.D. in Agricultural Engineering from Iowa State in 1986.

Riskowski came to the University of Illinois in the fall of 1986, where he was promoted from assistant to associate to full professor in the Department of Agricultural and Biological Engineering. During his time at the U of I, he was the leader of the Bioenvironmental Engineering division in the Department, and a founder and director of the Bioenvironmental and Structural Systems (BESS) Laboratory.

Riskowski is recognized internationally for his research concerning environmental control systems and light-frame structures. He was a principal investigator on several projects sponsored by NIH, NASA, NSF, ASHRAE and industry. His publication record includes over 80 peer-reviewed journal articles and over 100 conference papers. He is an author of nine handbooks, an ASABE standard, ten monographs and book chapters, and has given several invited lectures around the world, including Brazil, China, Europe, and Korea.

Dr. Riskowski is a member of both the American Society of Agricultural and Biological Engineers (ASABE) and the American Society for Heating, Refrigeration and Air-Conditioning Engineers (ASHRAE). He has been an associate editor for ASABE journals since 1994. His papers have received four ASABE paper awards and three ASHRAE Technical Paper awards. Other honors have included eight Blue Ribbon awards, an Outstanding Reviewer award from ASABE, and teaching excellence awards. He was also elected into the rural Builders Hall of Fame, received the ASABE Henry Giese Award, and is a Fellow of ASABE.

Dr. Riskowski left the Department at the end of 2001 to take his current position as Professor and Head of the Department of Biological and Agricultural Engineering at Texas A&M University.
John Siemens
1968-1998

Dr. John Siemens grew up in Lancaster, California on an alfalfa/dairy farm. Siemens earned a bachelor’s degree in Agricultural Engineering at the University of California at Berkeley and Davis. He earned a master’s in Agricultural Engineering at the University of Illinois and a Ph.D. in Civil Engineering, also at the U of I.

Siemens accepted a position as Assistant Professor of Agricultural Engineering at Cornell University in 1963. In 1968, John accepted an offer to return to Illinois as Associate Professor of Agricultural Engineering and Extension Specialist in Field Power and Machinery. Siemens established applied research projects to support his Extension program; several were cooperative efforts with other departments, including the Agronomy Department. Subject matter of major research projects included tillage systems for corn and soybean production, farm machinery management, and soil compaction. In 1970, he accepted a Residency in Engineering Practice and spent a year with Deere & Company at Moline, Illinois, where he worked on the evaluation of tillage systems for corn and soybean production and a computer program to select the optimum machinery set for a farm.

Siemens’ relationships with the Agronomy Department and Deere & Company were key to the major research contributions Siemens made to conservation tillage while at U of I. With financial support from Deere & Company, Siemens and Professor Oschwald from the Agronomy Department launched a massive tillage research project in 1971. Results of the project were widely distributed through their Extension Programs and played a major role in the nation-wide acceptance of conservation tillage and the virtual retirement of the moldboard plow.

In 1975-1976, Siemens was granted a sabbatical leave to evaluate and study field machinery selection methods used for corn production in South Africa. This launched John’s interest in machinery management and was the first of other overseas assignments in Iraq, Yugoslavia and Jamaica. Siemens worked with several graduate students in the development of machinery selection software for guiding farmers in selecting optimum sets of machinery for their farm operations.

During his career Dr. Siemens was a regular participant in meet-
ings and conferences sponsored by the Illinois Cooperative Extension Service. Siemens provided leadership and presentations in the areas of conservation tillage systems, farm machinery management and soil compaction. Siemens served as Extension Program Leader for the Department from 1983 through 1998.

In 1993, Siemens received the Senior Faculty Award for Excellence in Extension from the (then) College of Agriculture. In 1999, he was presented the John Deere Gold Medal Award, one of the highest honors granted by the (then) American Society of Agricultural Engineering.

Siemens retired from the Department in December of 1998.

M.E. “Mike” Tumbleson
1986–2006

Dr. M.E. “Mike” Tumbleson grew up in the small town of Trimont, Minnesota and hitchhiked to the University of Minnesota at the age of 17. Tumbleson earned a bachelor’s degree in Agricultural Education at Minnesota in 1958, a master’s in plant physiology in 1961 and a Ph.D. in nutrition and biochemistry in 1964.

After 20 years at the University of Missouri, Tumbleson joined the faculty at the University of Illinois in 1986, where he held a joint appointment in veterinary biosciences and agricultural engineering. In his time at the University, Tumbleson investigated a variety of areas, including the use of swine to evaluate alcoholism, ethanol production and corn utilization.

During the past few years, Tumbleson’s research publications have resulted from work on evaluating dry grind corn processing facilities with respect to optimizing ethanol production from corn grain, assessing fumonisin (a mycotoxin produced by fungi existing on corn plants) effects on swine, sheep, cattle and horse health, and commercial plant work with enzyme companies elucidating effects of operating conditions and equipment.

Tumbleson has coauthored more than 200 refereed journal papers and 500 scientific abstracts and presentations, often with colleagues from the Department, including Drs. Phil Buriak, Leslie Christianson, Steven Eckhoff, Kent Rausch and Vijay Singh. Tumbleson coauthored
publications with more than 100 other distinguished colleagues, including Robert Eppley (FDA, Washington, DC), David Johnston (ERRC/ARS/USDA, Wyndmoor, PA), D.K. Gupta (G.B. Pant University, Pantnagar, India), and Luk Vriens (Seghers, Wespelaar, Belgium).

In 1985, Tumbleson organized and chaired the international conference, “Swine in Biomedical Research,” after which he compiled and edited a three-volume treatise of the same name. In 1995, he organized and co-chaired an international symposium on “Advances in Swine in Biomedical Research,” and was a coeditor of a two-volume treatise of the same name.

Tumbleson has been a pilot his entire adult life, working as both an instructor (6500 hours) and an examiner. He often combines work and pleasure, taking farmers and cooperative elevator managers up in the air to evaluate crop conditions.

Tumbleson retired from the University of Illinois in May of 2006.