

## 2020 Fellows

### Virtual AIM

**James Bordovsky**, PE, senior research scientist and agricultural engineer, department of biological and agricultural engineering, Texas A&M University, is nominated for the 2020 Class of Fellows in recognition of his continuing contributions of record and service to society and the profession.

**Garey Fox**, PE, professor and department head, department of biological and agricultural engineering, North Carolina State University, is nominated for the 2020 Class of Fellows for his leadership and outstanding contributions to the teaching, research, and extension in agricultural and biological engineering.

**Jane Frankenberger**, professor, department of agricultural and biological engineering, Purdue University, is nominated for the 2020 Class of Fellows for impactful research and extension to improve agricultural drainage management, watershed leadership, and water quality.

**Suat Irmak**, PE, Harold W. Eberhard Distinguished Professor, biological systems engineering department, University of Nebraska-Lincoln, is nominated for the 2020 Class of Fellows for his global impact in advancing irrigation engineering and understanding crop energy interactions.

**Amy Kaleita**, PE, professor, department of agricultural and biosystems engineering, Iowa State University, is nominated for the 2020 Class of Fellows for sustained excellence in education, research, and service as an engineering faculty member.

**Won Suk (Daniel) Lee**, PE, professor, department of agricultural and biological engineering, University of Florida, is nominated for the 2020 Class of Fellows for outstanding contributions in the advancement of sensing technologies for precision production of specialty crops.

**Shiv Prasher**, PE, Distinguished James McGill Professor, faculty of agricultural and environmental sciences, McGill University, is nominated for the 2020 Class of Fellows for his distinguished career and service to the profession of soil and water engineering.

**Bradley Rein**, PE, division director of the agricultural systems institute of food production and sustainability, National Institute of Food and Agricultural, United States of Department of Agriculture, is nominated for the 2020 Class of Fellows for providing outstanding contributions enabling others through professional and government leadership of research and extension engineering related programs.

**Patricia K. Smith**, professor, department of biological and agricultural engineering, Texas A&M University, is nominated for the 2020 Class of Fellows for excellence in engineering instruction and the development of techniques for evaluating uncertainty in hydrologic modeling.

**Alvin R. Womac**, PE, professor, Institute of Agriculture, University of Tennessee, is nominated for the 2020 Class of Fellows for discoveries and developments in equipment systems for spray application technology and biomass logistics systems.

**Yibin Ying**, Qiushi Distinguished Professor, Zhejiang A&F University, is nominated for outstanding contributions and leadership in advancing agricultural sensing technology and equipment, enhancing biosystems engineering education, and promoting international collaboration.

## 2019 Fellows

Brief biographical information and citation  
Boston, Massachusetts

**Tami Brown-Brandl**, Professor and Dr. William E. and Eleanor L. Splinter Chair, Precision Livestock Engineer, University of Nebraska-Lincoln. For her lasting contribution in animal energetics and precision animal management.

**Hongda Chen**, National Program Leader, National Institute of Food and Agriculture, USDA, Fairfax, Virginia. For his outstanding leadership in advancing nanoscale science and technology for agriculture and food systems in research, education and outreach.

**John R. Fisher**, Vice President of Affairs-Safety, Alamo Group, Seguin, Texas. For his long dedication to development and application of industry standards and encouragement of off-road equipment safety.

**Tony Grift**, Associate Professor, Department of Agricultural and Biological Engineering, University of Illinois at Urbana-Champaign. In recognition of initiating and leading the ASABE Student Robotic Design Competition and elevating *Resource* Magazine to new heights

**Sherry Hunt**, Supervisory Civil Engineer, Hydraulic Engineering Research Unit, Agricultural Research Service, USDA, Stillwater, Oklahoma. For global contributions to the analysis, design and protection of stepped chute spillways and earthen embankments.

**Kati Migliaccio**, Professor, Department of Agricultural and Biological Engineering, University of Florida, Gainesville. Research, extension and teaching contributions in applied water management and conservation.

**David Murray**, Director of Product Safety and Standards, AGCO Corporation, Wichita, Kansas. For his dedication to creating a safer work environment for agricultural machinery operators and those nearby.

**Zhongli Pan**, Research Engineer, Western Regional Research Center, Agricultural Research Service, USDA, Albany, California. For his long career of scientific leadership in food and bioprocessing.

**Thomas Richard**, Professor of Agricultural and Biological Engineering and Director of Institutes of Energy and the Environment, Pennsylvania State University, University Park, Pennsylvania. For outstanding contributions to fundamental engineering design and practical solutions for sustainable agroecosystems and the bioeconomy.

**Kenshi Sakai**, Professor, Tokyo University of Agriculture and Technology, Fuchu Tokyo, Japan. For his work as a pioneering world leader in the application of nonlinear dynamics and chaos theory in agricultural and biological engineering.

**Puneet Srivastava**, Professor of Ecological Engineering and Director of the Water Resources Center, Auburn University, Auburn, Alabama. For pioneering innovative methods for optimizing BMP placement in a watershed and for mitigating drought impacts on water resources.

**J. Alex Thomasson**, Professor, Biological and Agricultural Engineering Department, Texas A&M University, College Station, Texas. For his leadership in the development of automated agriculture, including precision-agriculture technologies, sensor development, and machinery automation.

## 2018 Fellows

Brief biographical information and citation

Detroit, Michigan

**Devendra Man Amatya, PE**, research hydrologist, USDA Forest Service, Cordesville, South Carolina, is being honored for significant contributions to understanding the hydrology of wetland forests and the impacts of management alternatives.

**Paul Ayers, PE**, professor, biosystems engineering and soil science, Institute of Agriculture, University of Tennessee, Knoxville, is being recognized for applying engineering principles to solve natural resource problems, including off-road vehicle impacts, aquatic habitat mapping, and rollover protection structure (ROPS) designs.

**David Roy Bohnhoff, PE**, professor, biological systems engineering, University of Madison-Wisconsin, is being honored for outstanding leadership and contributions to research, teaching, outreach activities, and standards development involving the design, analysis, and construction of post-frame buildings.

**Michael D. Boyette, PE**, Philip Morris Professor of Biological and Agricultural Engineering, North Carolina State University, Raleigh, is being honored for his practical application of agricultural and bio-logical engineering to the postharvest handling of fresh fruit and vegetables.

**Dean E. Eisenhauer, PE**, emeritus professor, biological systems engineering, University of Nebraska–Lincoln, is being honored for his broad and extraordinary contributions in teaching, extension, and research emphasizing engineering practices for improved water management in agriculture.

**Clifford Fedler, PE**, professor, Department of Civil, Environmental, and Construction Engineering, Texas Tech University, Lubbock, Texas, is being honored for revolutionizing the design and applications of waste-water land application systems that have reduced costs and protected environmental conditions.

**Lawrence D. Gaultney**, senior engineering associate, E.I. duPont de Nemours and Company, Wilmington, Delaware, is being honored for development of innovative agricultural chemical applicators and dispensing systems, other machinery systems, and for outstanding support of preprofessionals.

**Ronaldo G. Maghirang**, associate dean for research and graduate programs and professor of biological and agricultural engineering, College of Engineering, Kansas State University (KSU), Manhattan, Kansas, is being honored for his outstanding global leadership and contributions to the advancement of animal and facility systems through teaching, research, and service.

**Dirk E. Maier, PE**, professor and postharvest engineer, Department of Agricultural and Biosystems Engineering, Iowa State University, Ames, is being honored for development and delivery of engineered technologies to protect stored bio-products world-wide.

**Steven K. Mickelson**, chair and Chuck R. and Jane F. Olsen Professor of Engineering, Department of Agricultural and Biosystems Engineering, Iowa State University, is being honored for sustained exemplary performance in teaching and learning, university administration, and resource conservation research.

**Rabi H. Mohtar**, dean, agricultural and food sciences, American University of Beirut, Texas A&M University, College Station, Texas, is being honored for his global impact through engaging local and international communities in discovery and education for understanding sustainable management of water, energy, and food resources and by working with the public and private sectors in science-based, informed dialogue.

**Thomas Trout, PE**, retired agricultural engineer, Agricultural Research Service, United States Department of Agriculture, Fort Collins, Colorado, is being honored for outstanding contributions to ASABE and to the science and practice of irrigation water management.

**Chenghai Yang**, research agricultural engineer, United States Department of Agriculture, Agricultural Research Service, Southern Plains Agricultural Research Center, College Station, Texas, is being honored for outstanding contributions in development and integration of remote sensing and engineering technologies for precision agriculture and pest management.

### **2017 Fellows**

Brief biographical information and citation  
Spokane, Washington

**Sreekala G. Bajwa**, department chair and professor, North Dakota State University, Fargo, North Dakota, is recognized for her outstanding research contributions in remote sensing in precision agriculture, stakeholder engagement, academic leadership, and service to the profession

**Edward M. Barnes**, senior director, Agricultural and Environmental Research Division, Cotton Incorporated, Cary, North Carolina, is being honored for his dedication to advancing the cotton industry and the agricultural and biological engineering profession.

**Christopher L. Butts, P.E.**, agricultural engineer, National Peanut Research Laboratory, USDA – ARS, Dawson, Georgia, is being recognized for his leading expertise in postharvest processing of peanuts reducing costs while preserving quality throughout the value chain.

**Mark E. Casada, P.E.**, agricultural engineer and lead scientist, USDA-ARS, Manhattan, Kansas, is being recognized for his superior contributions to science and education related to the areas of grain aeration, modeling, and storage.

**Indrajeet Chaubey**, professor and head, Department of Earth, Atmospheric, and Planetary Sciences and Department of Agricultural and Biological Engineering, Purdue University, West Lafayette, Indiana, is being recognized for his outstanding achievements in the area of ecohydrology, nonpoint source pollution modeling, and watershed management.

**Michael D. Dukes, P.E.**, professor of Agricultural and Biological Engineering, director of the Center for Landscape Conservation and Ecology, University of Florida, Gainesville, Florida, is being recognized for impactful and relevant research and extension in water conservation of irrigated systems.

**Michael C. Hirschi, P.E.**, professor emeritus, agricultural and biological engineering, University of Illinois, Urbana, Illinois, is being recognized for outstanding contributions to the education of young engineers through teaching, advising, mentoring, and accreditation activities.

**Bryan Jenkins**, professor and chair, Biological and Agricultural Engineering, University of California – Davis, is being recognized for exceptional contributions to the development and optimization of biomass and other renewable resources, through research, teaching, and professional service.

**Irenilza A. Nääs**, P.E., professor, Paulista University, Sao Paulo, Brazil, is being recognized for her international leadership in research, teaching, and extension programs in livestock housing.

**Erdal Ozkan**, professor, Food, Agricultural, and Biological Engineering, The Ohio State University, Columbus, Ohio, is being recognized for his scholarly accomplishments and educational materials developed resulting in the improvement of agrichemical application technology and practice.

**Dana Osborne Porter**, P.E., professor and extension agricultural engineering specialist, Texas A&M AgriLife Research and Extension Service; Extension Program Leader and Associate Department Head, Texas A&M University Department of Biological Agricultural Engineering, Lubbock, Texas, is being recognized for dedicated service toward the advancement of the agricultural and biological engineering profession.

**Sylvia L. Schonauer**, P.E., principal engineer, Advanced Innovation, Kellogg Company, Battle Creek, Michigan, is being recognized for providing leadership and creativity in the development and implementation of food processing technologies and tireless mentoring of young aspiring professionals.

**Leon G. Schumacher**, professor and chair, agricultural systems management, University of Missouri, Columbia, Missouri, is being recognized for his work which pioneered biodiesel as a biorenewable transportation fuel and developed new curricula in applied engineering for the profession.

## 2016 Fellow Citations Orlando, Florida

**DAVID D. BOSCH**, Research Hydraulic Engineer, USDA Agricultural Research Service, Southeast Watershed Research Laboratory, Tifton, Georgia, is being honored for his out-standing contributions to the science of water-shed hydrology and development of hydrologic models

**ROBERT T. BURNS**, P.E., Associate Dean, University of Tennessee Institute of Agriculture, Knoxville, Tennessee, is being honored for his outstanding contributions to improving environmental stewardship of animal production worldwide as an administrator, advisor, researcher, and extension engineer, and for his dedicated service to ASABE.

**GARY A. CLARK**, P.E., Senior Associate Dean and professor, College of Engineering, Kansas State University, Manhattan, Kansas, is being honored for his outstanding teaching, research and extension contributions to irrigation, water management, academic administration and leadership within the engineering profession.

**DARRIN J. DROLLINGER**, Executive Director, American Society of Agricultural and Biological Engineers, Saint Joseph, Michigan, is being honored for meritorious service within the equipment manufacturing industry, and for outstanding leadership in the non-profit arena focused on agricultural and biological engineering.

**JOSEPH P. HARNER**, P.E., Department Head and Professor, Biological and Agricultural Engineering Department, Kansas State University, Manhattan, Kansas, is being honored for advancing engineering

principles and implementing innovative ideas toward a safer and more sustainable food system.

**MAYNARD M. HERRON**, P.E., Engineering Manager, Product Proving, AGCO Corporation, Hesston, Kansas, is being honored for his selfless service to ASABE and his tireless advocacy for the profession of agricultural and biological engineering.

**KEVIN M. KEENER**, P.E., Director and Professor, BioCentury Research Farm Center for Crops Utilization Research, Department of Food Science and Human Nutrition, Iowa State University, Ames, Iowa, is being honored for out-standing technical contributions through application of science and engineering principles to improve food safety, enhance quality, and reduce waste in overall effort to promote sustainable

**SUE E. NOKES**, P.E., Chair and Professor, Department of Biosystems and Agricultural Engineering, University of Kentucky, Lexington, Kentucky, is being honored for her outstanding contributions in bioprocessing research and teaching and her leadership in agricultural and biological engineering.

**RANDY L. RAPER**, P.E., Assistant Director, Oklahoma Agricultural Experiment Station, Oklahoma State University, Stillwater, Oklahoma, is being honored for contributions to under-standing soil compaction and how to ameliorate it while practicing conservation tillage.

**MICHAEL D. SMOLEN**, Professor Emeritus, Oklahoma State University, Stillwater, Oklahoma, is being honored for exceptional leadership across extension, teaching, research, and consulting as it relates to water quality in the US.

**XIUZHI SUSAN SUN**, Distinguished Professor, Biomaterials Lab, Kansas State University, is being honored for her work in the conversion of biorenewable feedstocks into high-performance chemicals and polymers for biobased adhesives, plastics, coatings, and medical devices.

**THOMAS R. WAY**, Agricultural Engineer, USDA, Agricultural Research Service, National Soil Dynamics Laboratory, Auburn, Alabama, is being honored for outstanding research on traction performance, soil compaction, agricultural sustainability, and agricultural equipment development.

**RUIHONG ZHANG**, Professor, Biological and Agricultural Engineering Department, University of California – Davis, Davis, California, is being honored for outstanding contributions to bioenvironmental engineering in the areas of waste conversion, bioenergy, and biofuel production.

## **2015 Fellow Recipient Citations**

### **Fellows Induction Ceremony – New Orleans, Louisiana**

**WILLIAM J. ELLIOT, P.E.**, research engineer, USDA Forest Service, Rocky Mountain Research Station, Moscow, Idaho, for his outstanding leadership in education and erosion prediction science, and for his contributions to soil and water conservation engineering.

**ALAN HANSEN**, professor and division leader, Department of Agricultural and Biological Engineering, University of Illinois, Urbana, Illinois, for his outstanding national and international contributions to education and research in agricultural and biological engineering.

**ROGER M. HOY**, professor, Department of Biological Systems Engineering, and director, Nebraska Tractor Test Laboratory, Lincoln, Nebraska, for his outstanding leadership contributions in the teaching and mentoring of graduate and undergraduate students, in tractor-and performance-related research, and in the development of national and international agricultural tractor and equipment safety standards.

**DAVID D. JONES, P.E.**, associate dean for undergraduate programs, College of Engineering, and professor, Department of Biological Systems Engineering, University of Nebraska, Lincoln, Nebraska, for his extraordinary contributions in engineering education, accreditation, and in the transitioning of biological systems engineering while enhancing agricultural engineering.

**ANN LEE KENIMER, P.E.**, associate provost for undergraduate studies and professor, Department of Biological and Agricultural Engineering, Texas A&M University, College Station, Texas, for her excellence in teaching and administration of educational programs, and for outstanding service to agricultural and biological engineering within ABET and ASABE.

**YOSHISUKE KISHIDA**, president, Shin-Norinsha Co., Ltd., and president, Farm Machinery Industrial Research Corp., Tokyo, Japan, for his outstanding technical leadership, international expertise, and publications on agricultural mechanization in Japan and developing countries.

**FREDDIE RAY LAMM, P.E.**, professor and research irrigation engineer, Kansas State University, Northwest Research-Extension Center, Colby, Kansas, for his extensive record of influential and creative research, education, and service to the community of irrigation engineers and scientists.

**KURT C. LAWRENCE**, supervisory agricultural engineer and research leader, Quality and Safety Assessment Research Unit, USDA-Agricultural Research Service, U.S. National Poultry Research Center, Athens, Georgia, for his outstanding technical contributions to grain moisture sensing and multispectral and hyperspectral imaging for food safety and quality monitoring applications.

**RAFAEL MUÑOZ-CARPENA**, professor, Department of Agricultural and Biological Engineering, University of Florida, Gainesville, Florida, for his outstanding leadership contributions as an educator and researcher in the hydrological modeling of vegetative filter strips and complex integrated environmental systems.

**BOSOOON PARK**, research agricultural engineer and lead scientist, Quality and Safety Assessment Research Unit, USDA-Agricultural Research Service, U.S. National Poultry Research Center, Athens, Georgia, for his outstanding contributions in the advancement of hyperspectral and real-time multispectral imaging and nanotechnology for food safety and quality.

**R. ROGER RUAN**, professor, Department of Bioproducts and Biosystems Engineering, director, Center for Biorefining, University of Minnesota, St. Paul, Minnesota, for his innovative research that has advanced the knowledge and technologies for food stability, alternative food processes, and renewable energy applications.

**DAVID C. SLAUGHTER**, professor, Department of Biological and Agricultural Engineering, University of California, Davis, California, for his outstanding contributions to agricultural automation and development of sensing technologies for agricultural product quality and precision agriculture.

## 2014 Fellow Recipient Citations Fellows Induction Ceremony – Montreal, Canada

**WAYNE M. BOGOVICH, P.E.**, natural agricultural engineer, USDA-Natural Resources Conservation Service (NRCS), Washington, D.C., for his national leadership within USDA and for his broad spectrum of agricultural and biological engineering practices applied to the land.

**RUTH BOOK, P.E.**, state conservation engineer, USDA-Natural Resources Conservation Service (NRCS), Champaign, Illinois, for her outstanding leadership accomplishments in conservation and environmental engineering, and as a role model and mentor to young women.

**BERNARD ENGEL, P.E.**, professor and head, Department of Agricultural and Biological Engineering, Purdue University, West Lafayette, Indiana, for his outstanding research contributions to and academic leadership of one of the premier agricultural and biological engineering programs in the world.

**OLADIRAN O. FASINA, P.E.**, professor, Department of Biosystems Engineering, Auburn University, Auburn, Alabama, for his outstanding contributions to improving our understanding of biological materials, developing of engineering standards, and providing academic leadership.

**DOROTA Z. HAMAN**, professor and chair, Department of Agricultural and Biological Engineering, University of Florida, Gainesville, Florida, for her academic leadership, for her worldwide accomplishments in research and extension focused on water conservation, and as a role model for young women engineers.

**MARK HANNA, P.E.**, extension agricultural engineer, Department of Agricultural and Biosystems Engineering, Iowa State University, Ames, Iowa, for his outstanding contributions to sustainable agricultural systems through timely extension educational programs and research.

**SCOTT A. SHEARER, P.E.**, professor and chair, Department of Food, Agricultural and Biological Engineering, The Ohio State University, Columbus, Ohio, for his outstanding contributions in precision agriculture technologies as an administrator, teacher, advisor, and researcher.

**JUMING TANG**, regents professor and distinguished chair of food engineering, Department of Biological Systems Engineering, Washington State University, Pullman, Washington, for his outstanding contributions to graduate education in food engineering and in the development and transfer of advanced food processing technologies to benefit the food industry and general public.

**RANDAL TAYLOR, P.E.**, professor and extension agricultural engineer, Department of Biosystems and Agricultural Engineering, Oklahoma State University, Stillwater, Oklahoma, for his outstanding contributions in extension, research, and teaching involving conservation tillage, machinery management, and precision agriculture.

**DARREL M. TEMPLE, P.E.**, retired research hydraulic engineer, and collaborator, USDA-Agricultural Research Service, Hydraulic Engineering Research Unit, Stillwater, Oklahoma, for his advancements to the application of effective stress principles and erosion processes for the design and rehabilitation of vegetated channels, earthen spillways, and embankments.

**CURTIS L. WELLER, P.E.**, director, Nebraska Manufacturing Extension Partnership, and professor, Department of Food Science and Technology, University of Nebraska, Lincoln, Nebraska, for his outstanding contributions in teaching, curriculum development, assessment, ABET accreditation, professional service, engineering licensure, research, and outreach in food security.

**LARRY G. WELLS, P.E.**, professor emeritus, Department of Biosystems and Agricultural Engineering, University of Kentucky, Lexington, Kentucky, for his outstanding accomplishments as a teacher, mentor, and researcher in the areas of machine-soil relationships, land reclamation, and tobacco mechanization.

## 2013 Fellow Recipient Citations

### Fellows Induction Ceremony – Kansas City, Missouri

**DONN G. DECOURSEY, P.E.**, retired, USDA - Agricultural Research Service, Chickasha, OK; Oxford, MS; and Fort Collins, CO, for his outstanding accomplishments that have significantly advanced the science, understanding, and conservation of agricultural soil, water, and natural resources worldwide as a researcher, leader, and administrator.

**NORMAN R. FAUSEY**, supervisory research soil scientist and research leader, USDA - Agricultural Research Service, National Program 211, Water Availability and Watershed Management, Soil Drainage Research Unit, Columbus, Ohio, for his outstanding contributions in the development and advancement of agricultural drainage and water management technologies.

**DURHAM KEN GILES**, professor, Department of Biological and Agricultural Engineering, University of California, Davis, California, for his insightful research, teaching, and outreach related to engineering design and development for agricultural mechanization, especially in the technical area of spraying and materials handling.

**GREG HANSON, P.E.**, retired, supervisory engineer & research leader, USDA - Agricultural Research Service, Hydraulic Engineering Research Unit, Stillwater, Oklahoma, for his outstanding research contributions to the understanding and prediction of soil erosion by concentrated flow.

**PAUL H. HEINEMANN**, professor and head, Department of Agricultural and Biological Engineering, The Pennsylvania State University, University Park, Pennsylvania, for his outstanding contributions in teaching, advising, and administration, and for research in specialty crop production efficiency.

**KENNETH HELLEVANG, P.E.**, extension agricultural engineer and professor, Department of Agricultural and Biosystems Engineering, North Dakota State University, Fargo, North Dakota, for his outstanding educational and extension contributions worldwide involving crop post-harvest engineering, structures and indoor environmental engineering, flooding preparation and recovery, energy efficiency, and service to ASABE.

**GREGORY D. JENNINGS, P.E.**, president, Jennings Environmental, Apex, North Carolina, retired professor, Department of Biological and Agricultural Engineering, North Carolina State University, Raleigh, North Carolina, for his exemplary leadership in improving water quality and watershed health through extension, teaching, research, and consulting.

**PRASANTA K. KALITA**, professor and division leader, Soil and Water Resources Engineering, Department of Agricultural and Biological Engineering, and assistant dean of research, College of Agricultural, Consumer and Environmental Sciences, University of Illinois at Urbana-Champaign, Urbana, Illinois, for his outstanding contributions and worldwide involvement in the promotion and enhancement of teaching, learning, and research in agricultural and biological engineering.

**RENFU LU**, supervisory research agricultural engineer and research leader, USDA - Agricultural Research Service, East Lansing, Michigan, adjunct professor, Department of Biosystems and Agricultural Engineering, Michigan State University, East Lansing, Michigan, for his outstanding contributions in the development and application of sensing technologies for property characterization and quality assessment of horticultural and food products.

**DANNY H. ROGERS, P.E.**, professor, extension agricultural engineer and irrigation specialist, Department of Biological and Agricultural Engineering, Kansas State University, Manhattan, Kansas, for his outstanding research and extension programs in water resources management with a primary focus on irrigated agriculture.

**YANG TAO, P.E.**, professor, Fischell Department of Bioengineering, Biological Resources Engineering, University of Maryland, College Park, Maryland, for his nationally and internationally recognized cutting-edge research programs and contributions to postharvest and food engineering in the development of innovative machine vision technologies and systems for automated on-line inspection, sorting, and processing for fruit and vegetables, poultry, and agricultural materials.

**STEVEN E. TAYLOR, P.E.**, professor, head, and director, Department of Biosystems Engineering and Center for Bioenergy and Bioproducts, Auburn University, Auburn, Alabama, for his outstanding contributions to structural wood engineering education, service to the wood products industry, forest engineering research, and academic leadership of biological engineering programs/

**QIN ZHANG**, director, Center for Precision and Automated Agricultural Systems, professor, Department of Biological Systems Engineering, Washington State University, Pullman, Washington, for his outstanding contributions to the advancement of knowledge and technology in off-road equipment mechatronics, intelligent agricultural machinery, and agricultural automation.

## **2012 Fellow Recipient Citations Fellow Induction Ceremony in Dallas, Texas**

**Ronald W. Brass, P.E.**, retired, Deere & Company, safety and liability consultant, R.W. Brass Consulting, Dubuque, Iowa, for his distinguished and outstanding 36-year career at Deere & Company in various engineering capacities.

**Glenn O. Brown, P.E.**, Regents Professor, Department of Biosystems and Agricultural Engineering, Oklahoma State University, Stillwater, Oklahoma, for his outstanding accomplishments in student development as an educator and mentor, and for his soil and groundwater research.

**Larry W. Caldwell, P.E.**, watershed specialist, Oklahoma Conservation Commission; retired, USDA – Natural Resources Conservation Service – NRCS, Stillwater, Oklahoma, for his innovative and distinguished engineering service and accomplishments in dam safety, rehabilitation of aging dams, and development of emergency action plans for dam failure.

**Michael J. Delwiche, P.E.**, professor, Department of Biological and Agricultural Engineering, University of California, Davis, California, for his outstanding contributions to biological engineering as a teacher and researcher, especially in the development of sensors and instrumentation for measurement and control.

**Harold M. Keener**, Professor Emeritus and associate chair, Department of Food, Agricultural, and Biological Engineering (FABE), Ohio Agricultural Research and Development Center (OARDC), The Ohio State University, Wooster, Ohio, for his leadership and outstanding contributions toward advancing knowledge and technology transfer through improved composting systems, utilization of agricultural biomass, and energy development.

**Kasisviswanathan Muthukumarappan**, professor, Department of Agricultural and Biosystems Engineering, South Dakota State University, Brookings, South Dakota, for his outstanding and extraordinary contributions as a researcher, mentor, and educator in food and bioprocess engineering, and in the development of ASABE and other international standards.

**Carol Plouffe, P.E.**, supervisor, Systems Performance and Analysis Group, Deere & Company, Moline Technology Innovation Center, Moline, Illinois, for his outstanding accomplishments and innovative research using modeling and testing techniques to improve the understanding of soil-and crop-machine interactions.

**Itzhak E. Shmulevich**, professor and deputy dean, Faculty of Civil and Environmental Engineering, Technion-Israel Institute of Technology, and head, Agricultural Engineering Research Center, Haifa, Israel, for his outstanding global leadership and contributions to applied mechanics in soil dynamics and in developing nondestructive fruit firmness techniques as a teacher, researcher, and extender of knowledge in agricultural engineering.

**Daniel L. Thomas, P.E.**, professor and head, Department of Biosystems and Agricultural Engineering, Oklahoma State University, Stillwater, Oklahoma, for his academic leadership, research, teaching and service in advancing the profession of biological and agricultural engineering.

**Ernest W. Tollner, P.E.**, professor and graduate coordinator, College of Engineering, University of Georgia, Athens, Georgia, for his outstanding accomplishments in teaching, research, and publication activities, and for his extensive involvement in professional engineering registration.

## 2011 Fellow Recipient Citations

### Fellows Induction Ceremony in Louisville, Kentucky

**Jeffrey G. Arnold**, agricultural engineer, USDA - Agricultural Research Service, Grassland Soil and Water Research Laboratory, Temple, Texas, for his outstanding leadership in and contributions to the advancement of soil and water engineering.

**Manjeet S. Chinnan**, professor emeritus, Food Science and Technology Department, and Biological and Agricultural Engineering Department, University of Georgia, Griffin, Georgia, for his distinguished food engineering accomplishments as an educator and researcher in developing and applying techniques for optimizing food processes and food products.

**Dennis C. Flanagan**, research agricultural engineer, USDA - Agricultural Research Service, National Soil Erosion Research Laboratory, West Lafayette, Indiana, for his outstanding leadership in developing and implementing new erosion prediction technology, and for his ASABE leadership in soil and water conservation.

**Jay D. Harmon, P.E.**, professor and extension livestock housing specialist, Agricultural and Biosystems Engineering Department, Iowa State University, Ames, Iowa, for his outstanding contributions to animal production systems and service to ASABE through research, extension, outreach, and teaching.

**Bruce R. Hartsough, P.E.**, professor, Department of Biological and Agricultural Engineering, and associate dean, Academic Personnel and Planning, College of Engineering, University of California, Davis, California, for his outstanding contributions to the advancement of forest engineering and the professional development of agricultural and biological engineering education.

**David R. Hundebly, P.E.**, president, Hundebly Consulting, Ltd., Saskatoon, Saskatchewan, Canada, for his internationally recognized contributions in the research, design and development of agricultural machinery, and also in standard development.

**Kevin A. Janni, P.E.**, professor and extension engineer, Bioproducts and Biosystems Engineering Department, University of Minnesota, St. Paul, Minnesota, for his outstanding leadership and contributions as a researcher, teacher, extender of knowledge, and Society member involving air quality, ventilation, and effective environmental mitigation practices.

**Shrinivasa K. Upadhyaya**, professor, Biological and Agricultural Engineering Department, University of California, Davis, California, for his outstanding global leadership and contributions to cutting-edge advances in soil dynamics as a teacher, researcher, and extender of knowledge.

**Daniel W. Wambeke, P.E.**, vice president, engineering and sales, SCAFCO Corporation, Spokane, Washington, for his outstanding accomplishments in consulting, design, and sales initiatives supporting worldwide development and utilization of modern grain handling systems..

**Bruce N. Wilson, P.E.**, professor, Bioproducts and Biosystems Engineering Department, University of Minnesota, St. Paul, Minnesota, for his outstanding contributions to soil and water engineering by advancing knowledge, improving design tools, and teaching engineering principles.

**Naiqian Zhang**, professor and director of graduate studies, Biological and Agricultural Engineering Department, Kansas State University, Manhattan, Kansas, is being honored for his outstanding and dedicated performance in educating engineering professionals and in developing new sensors and control applications for agricultural and biological systems.

**Yuanhui Zhang, P.E.**, The Innoventor Professor in Engineering, and leader, Bioenvironmental Engineering Section, associate head, Agricultural and Biological Engineering Department, University of Illinois, Urbana, Illinois, for his outstanding contributions as a teacher and researcher in bioenvironmental engineering.

## 2010 Fellow Recipient Citations

### Fellows Induction Ceremony in Pittsburgh, Pennsylvania

**Robert G. Evans**, supervisory agricultural engineer, research leader, USDA-ARS, Northern Plains Agricultural Research Laboratory, Agricultural Systems Research Unit, Sidney, Montana, as an internationally recognized authority in water management and precision irrigation, and for development of innovative techniques to beneficially modify plant environment

**Richard S. Gates, P.E.**, professor, Agricultural and Biological Engineering Department, University of Illinois, Urbana, Illinois, as an accomplished and internationally respected researcher, teacher and extender of knowledge in the area of bioenvironmental engineering.

**Larry H. Gay, P.E.**, tractor historian and author, Geneseo, Illinois; retired manager of engineering, John Deere Merchandise Division, Deere & Company, Tractor, an historian and author, for his outstanding contributions to engineering management and product equipment design compatible with the “new generation” tractor design, and for his thorough research and documentation of farm tractors and agricultural equipment industry history.

**Steven J. Hoff, P.E.**, professor, Agricultural and Biosystems Engineering Department, Iowa State University, Ames, Iowa, for his exceptional research and teaching performance in animal production engineering and for his service to the profession.

**Fu-Hung Hsieh, P.E.**, professor and director of graduate studies, Biological Engineering Department, co-leader, Bioprocessing and Biosensing Center, Food for the 21<sup>st</sup> Century Research Program, University of Missouri, Columbia, Missouri, for his outstanding contributions in food and biological engineering education and in the development of innovative food processing technologies.

**Earle C. Morton, P.E.**, product safety manager, AGCO Canada Ltd., Oakville, Ontario, Canada, for his outstanding accomplishments in the development of agricultural machinery products and for his guidance in writing and implementation of safety standards for the agricultural industry.

**John A. Replogle, P.E.**, collaborator, Arid-Land Agricultural Research Center (ALARC), USDA-ARS, Maricopa, Arizona, and consultant in Water Resources, for his distinguished research accomplishments in improved water measurement technology of irrigated agriculture.

**Yoav Sarig, P.E.**, professor emeritus, Agricultural Research Organization, Institute of Agricultural Engineering; chairman, POMEQ-TECH, International Projects Consultancy; consultant, Bet Dagan, Israel, for his outstanding and diverse accomplishments in research, academia, administration, and extension in agricultural and biological engineering.

**John K. Schueller, P.E.**, professor, Mechanical and Aerospace Engineering, affiliate professor, Agricultural and Biological Engineering Department, University of Florida, Gainesville, Florida, for his outstanding dedication as a researcher, teacher, extender of knowledge, and Society member, in the development of technologies utilized in agricultural equipment and precision agriculture.

**Robert S. Sowell**, vice president, Programs and Operations, Council of Graduate Schools, Washington D.C; dean emeritus, Graduate School, and professor emeritus, Biological and Agricultural Engineering Department, North Carolina State University, Raleigh, North Carolina, for his outstanding leadership contributions to optimization and knowledge engineering through administration, research, teaching, extension, and outreach.

**Charles E. Sukup, P.E.**, president, Sukup Manufacturing Company, Sheffield, Iowa, for his exemplary leadership exhibited in agricultural equipment manufacturing, and in service to ASABE and the profession.

**Harmon L. Towne, P.E.**, retired vice president, Engineering & Product Development, Brock Manufacturing, Milford, Indiana, for his outstanding engineering leadership in the development of grain drying, storage and aeration systems and related industry standards, and for his service to ASABE and the profession.

## 2009 Fellow Recipient Citations Fellows Induction Ceremony in Reno, Nevada

**William D. Batchelor**, professor and head, Agricultural and Biological Engineering Department; director, Sustainable Energy Research Center; director, Energy Institute, Mississippi State University, Mississippi State, Mississippi, for his numerous research, educational, and administrative contributions in the areas of information and electrical technologies and biological engineering, and for his pioneering development of methods to stimulate the effects of biotic and abiotic stress on plant growth.

**Paul F. Burkner, P.E.**, vice president, AIN, Inc. (Ag Industrial Manufacturing, Inc.), Lodi, California, for his outstanding contributions and accomplishments in agricultural engineering through his numerous equipment designs that have improved harvesting and handling of agricultural products, of which his focus for the past 40 years has been on vineyard mechanization.

**Ralph P. Cavaliere, P.E.**, associate dean for research, College of Agricultural, Human, and natural Resource Sciences; director, Agricultural Research Center; professor, Biological Systems Engineering Department, Washington State University, Pullman, Washington, for his outstanding leadership as an educator, administrator, and researcher in the field of food and biological engineering, and considered an expert in bioenergy issues, food processing, and instrumentation.

**Yud-Ren Chen**, retired, supervisory agricultural engineer and research leader, USDA-ARS, Instrumentation and Sensing Laboratory, Beltsville Agricultural Research Center, Beltsville, Maryland, for his visionary leadership as an administrator, and for pioneering research he has led over the course of his distinguished career in the development of non-destructive and non-invasive systems for rapid measurement of post-harvest quality and safety attributes of agricultural commodities.

**William E. Field**, professor and extension safety specialist, Agricultural and Biological Engineering Department, Purdue University, West Lafayette, Indiana, for his outstanding accomplishments as a national leader of agricultural safety and health promotion through engineering education and outreach, and for the establishment of the Breaking New Ground Resource Center that serves the needs of farmers, ranchers, and others throughout the U.S.

**Temple Grandin**, professor, Animal Science Department, Colorado State University; owner and consultant, Grandin Livestock Handling Systems, Inc., Fort Collins, Colorado, for her worldwide reputation and outstanding contributions in the design of efficient livestock handling systems that improve the welfare of animals and their interaction with people.

**Robert (Bobby) D. Grisso, P.E.**, professor and extension engineer, Biological Systems Engineering Department, Virginia Tech, Blacksburg, Virginia, for his outstanding accomplishments and contributions to the profession through service activities, extension engineering education, teaching and research involving machinery systems used in agricultural production.

**Conly L. Hansen, P.E.**, professor, Nutrition & Food Sciences and Biological and Irrigation Engineering; director, Center for Profitable Uses of Agricultural Byproducts, Utah State University, Logan, Utah, for his outstanding contributions as a teacher, researcher, extender of knowledge, and contributor to technical societies which has greatly benefited students, research literature and the worldwide community, along with research focused on waste management, sustainable energy, and innovative technologies that add value to organic byproducts.

**Yanbin Li, P.E.**, professor, Biological and Agricultural Engineering Department, Center of Excellence for Poultry Science, University of Arkansas, Fayetteville, Arkansas, for his outstanding contributions as an educator, and leading expert in the area of food safety for research involving the advancement of biosensor technology for the detection of bacteria and virus with original concepts and design in research and commercialization.

**Dennis J. Murphy**, distinguished professor, Agricultural Safety & Health, and extension safety specialist, Agricultural and Biological Engineering Department, Pennsylvania State University, University Park, Pennsylvania, for his outstanding accomplishments as an internationally recognized leader in agricultural safety and health education, research and outreach for which he has greatly advanced the state-of-the-art of agricultural safety and health issues.

**Shahab Sokhansanj, P.E.**, distinguished researcher and developer, Oak Ridge National Laboratory, Oak Ridge, Tennessee, for his outstanding contributions as a researcher and teacher in the development of engineering solutions for the processing of biomaterials for food, feed, fiber, and energy, and for his service to ASABE and other professional organizations.

**Ajit K. Srivastava, P.E.**, professor and chair, Biosystems and Agricultural Engineering Department, Michigan State University, East Lansing, Michigan, for his outstanding contributions to research applied to the application of machinery systems to food production, harvest, post-harvest, and processing operations, along with exemplary academic leadership and dedicated service to the profession, and to ASABE.

**Larry F. Stikeleather, P.E.**, professor, Biological and Agricultural Engineering Department, North Carolina State University, Raleigh, North Carolina, for his outstanding contributions to industry and academia as a researcher and professor involved in the area of machine design and the interaction of machines with their human operators.

**Wesley W. Wallender, P.E.**, professor, Land, Air and Water Resources, and Biological and Agricultural Engineering Department, University of California, Davis, California, for his outstanding record of accomplishments and contributions to irrigation engineering, to the literature of the profession, and as a researcher, educator, and consultant as an internationally recognized expert in assessing the impact of resource management options for both agricultural production and environmental quality.

**Ronald (Ron) E. Yoder, P.E.**, professor and head, Biological Systems Engineering Department; associate director, Agricultural Water Management, Institute of Agriculture and Natural Resources, University of Nebraska, Lincoln, Nebraska, for his outstanding leadership and contributions as a teacher, administrator, researcher, proponent of the professional engineering exam, and dedicated Society member.

## 2008 Fellow Recipient Citations

### Fellows Induction Ceremony in Minneapolis, Minnesota

**Ray A. Bucklin, P.E.**, professor and graduate coordinator, Agricultural and Biological Engineering Department, University of Florida, for his outstanding leadership and contributions to research, teaching and extension programs involving agricultural structures and livestock housing, grain drying and storage systems, greenhouse design, and space agriculture.

**Philip Buriak**, professor emeritus, Agricultural and Biological Engineering Department, University of Illinois, Urbana, Illinois, for his outstanding contributions to the education of agricultural and biological engineering students, and for his leadership in the evolution of agricultural mechanization to technical systems management, curriculum development, technical editing, standards development related to agricultural tractors.

**Douglas M. Durant**, manager, Product Standards, and global agricultural tractor strategic standards coordinator, John Deere Product Engineering Center, Waterloo, Iowa, for his outstanding contributions and leadership to the global vision for national and international standards development related to agricultural tractors.

**John A. George, P.E.**, president and chief engineer, Agricultural Engineering Associates, Inc., Uniontown, Kansas, for his long-term and highly-successful engineering consulting practice, and for his outstanding innovations and improvements to livestock production, waste management, and water resource structures.

**Robert E. Graves, P.E.**, professor, Agricultural and Biological Engineering, Pennsylvania State University, University Park, Pennsylvania, for his leadership and outstanding accomplishments as an extension and outreach educator for the improvement of agricultural practices for dairy and livestock housing, manure handling systems and environmental quality, engineering standards, state regulations and best management practices for dairy farmers, recycling, composting and reuse of organic wastes.

**Sonia Maassel Jacobsen, P.E.**, hydraulic engineer, USDA-NRCS, St. Paul, Minnesota, for her expertise and outstanding accomplishments in the emerging field of wetland hydrology and water resources engineering.

**William M. (Bill) Miller, P.E.**, professor emeritus, Agricultural and Biological Engineering Department, University of Florida, Lake Alfred, Florida, for his leadership and outstanding accomplishments as a researcher and extension engineer toward advancing the science and technology of post-harvest engineering.

**David S. Ross**, professor, Environmental Science and Technology Department, and extension agricultural engineer, Maryland Cooperative Extension, University of Maryland, College Park, Maryland, for his distinguished contributions as a faculty member, educator, extension specialist for increased crop productivity with reduced energy consumption and conservation of natural resources, resulting in increased market value of crops and improved profitability for growers and industry.

**Stephen W. Searcy, P.E.**, professor and associate head, Biological and Agricultural Engineering Department, Texas A&M University, College Station, Texas, for his distinguished accomplishments in teaching, and extension involving a wide range of projects including strategic planning, curriculum and facilities development, and research projects that have significantly impacted the cotton industry.

## **2007 Fellow Recipient Citations**

### **Fellows Induction Ceremony during Centennial Annual Meeting**

### **Minneapolis, Minnesota**

**Kifle G. Gebremedin**, professor, Biological and Agricultural Engineering Department, Cornell University, Ithaca, New York, for his outstanding contributions in teaching and research in the area of structures and environment.

**Janusz S. Haman, P.E.**, retired professor, Agricultural Engineering Department, Agricultural Academy, Krakow, Poland; director, Center for Science Advancement, Polish Academy Warsaw, Poland, for his superior leadership in the development of agricultural engineering education and research programs in Poland.

**Awatif El-Domiaty Hassan, P.E.**, professor emeritus, Forestry and Biological and Agricultural Engineering Department, North Carolina State University, Raleigh, North Carolina, for her significant accomplishments as a researcher, teacher, and for service to ASSABE and other national and international organizations.

**Larry G. Jacobson, P.E.**, professor and extension engineer, Bioproducts and Biosystems Engineering Department, University of Minnesota, St. Paul, Minnesota, for his outstanding contributions in the design and development of engineering practices concerning animal housing, air quality, and manure management systems.

**Don D. Jones, P.E.**, professor and extension engineer, Agricultural and Biological Engineering Department, Purdue University, West Lafayette, Indiana, for his outstanding contributions and achievements in extension, applied research, and teaching in the area of agricultural structures and environmental systems.

**Ronald L. McAllister**, manager, CNH America LLC, New Holland, Pennsylvania, for his outstanding leadership and accomplishments in the field of agricultural safety engineering and dedicated service to the Society.

**James Pat Murphy, P.E.**, professor and interim assistant director, extension agricultural and natural resources program, Biological and Agricultural Engineering Department, Kansas State University, Manhattan, Kansas, for his outstanding leadership and contributions in the areas of environmental design, livestock structures, technology transfer of research information, and administration of agricultural extension programs.

**Gerald L. Riskowski, P.E.**, professor and head, Biological and Agricultural Engineering Department, Texas A&M University, College Station, Texas, for his distinguished achievements in advancing the knowledge and science of agricultural structures and environment through teaching and research of post-frame foundation design and animal ventilation systems.

**Kenneth A. Sudduth, P.E.**, agricultural engineer and lead scientist, USDA-ARS, Cropping Systems and Water Quality Research Unit, University of Missouri, Columbia, Missouri, for his innovative research that has significantly contributed to furthering the application of precision agriculture.

**Clément Vigneault, P.E.**, research scientist, Agriculture and Agri-Food Canada, Horticultural Research and Development Centre, Saint-Jean-sur-Richleau, Quebec, Canada, for his research and contributions to postharvest technology.

**Phillip W. Westerman, P.E.**, professor, research and extension engineer, Biological and Agricultural Engineering Department, North Carolina State University, Raleigh, North Carolina, for his outstanding contributions to agricultural waste management and environmental protection through research and technology transfer of innovative technologies.

## 2006 Fellow Recipient Citations

### Fellows Induction Ceremony in Portland, Oregon

**David B. Beasley, P.E.**, professor, Biological and Agricultural Engineering Department, North Carolina State University, Raleigh, North Carolina, for his pioneering work in water quality modeling and erosion control and for his leadership in academic program modernization, assessment, and accreditation as a researcher and educator.

**Donald C. Erbach, P.E.**, national program leader, engineering and energy, USDA-ARS, National Program Staff, Beltsville, Maryland, for his distinguished career as a research leader, administrator, author, and contributor to governmental agencies and technical societies in the areas of bioenergy and energy alternatives, crop production, quality and utilization of agricultural products, and engineering components of ARS research.

**Abdel Ghaly, P.Eng.**, professor, Biological Engineering Department, Dalhousie University, Halifax, Nova Scotia, Canada, for his outstanding accomplishments as a teacher, researcher, extender of knowledge, and contributor to technical societies and organizations in the areas of waste management and utilization, pollution prevention, biotechnology, computer control of bioreactors, energy recovery from biomass through biochemical and thermochemical conversions, and solar drying of animal waste.

**Sundaram Gunasekaran**, professor, Biological Systems Engineering Department, University of Wisconsin, Madison, Wisconsin, for his outstanding contributions to the food engineering profession and food industry through research, teaching, and outreach activities involving food and bioprocessing engineering.

**Albert R. Jarrett, P.E.**, professor, Agricultural and Biological Engineering Department, Pennsylvania State University, University Park, Pennsylvania, for his dedication and outstanding accomplishments as an agricultural engineer, researcher, educator, mentor, which have advanced natural resources engineering.

**Anthony H. Kajewski**, project engineer, John Deere Product Engineering Center, Waterloo, Iowa, for his outstanding achievements in agricultural tractor development, standards, and service to the agricultural engineering profession.

**Chandra Madramootoo, P.Eng.**, James McGill professor, Bioresource Engineering Department; dean, Faculty of Agricultural and Environmental Sciences; associate vice principal, McGill University, Ste-Anne-de Bellevue, Quebec, Canada, for his outstanding contributions to soil and water engineering worldwide as a teacher, researcher, and consulting engineer.

**Saied Mostaghimi, H.E.** and Elizabeth F. Alphin professor, Biological Systems Engineering Department, Virginia Tech, Blacksburg, Virginia, for his distinguished career in soil and water engineering and for significant contributions to the profession through research, education, and service activities.

**John (Jack) A. Nienaber, P.E.**, agricultural engineer, USDA-ARS, U.S. Meat Animal Research Center, Clay Center, Nebraska, for his outstanding research leadership for improved engineering and management of livestock production and waste facilities through increased understanding of animal physiology and its relations to heat and mass transfer in livestock buildings and surroundings.

**Fred A. Payne**, professor, Biosystems and Agricultural Engineering Department, University of Kentucky, Louisville, Kentucky, for his significant academic and industrial achievements in the food industry, development of optical technologies for food process control, and for leadership in the organization of food processing automation conferences.

**Mary Leigh Wolfe**, professor and assistant department head, Biological Systems Engineering Department, Virginia Tech, Blacksburg, VA, for her outstanding contributions to agricultural and biological engineering education and research in the areas of NPS pollution control and modeling, and for dedicated service to the Society and ABET. She has the distinction of being the first woman to be elected an ASABE Fellow.

## 2005 Fellow Recipient Citations

### Fellows Induction Ceremony in Tampa, Florida

**W. Stanley Anthony**, supervisory agricultural engineer and research leader, USDA-ARS Cotton Ginning Research Laboratory, Stoneville, Mississippi, for his outstanding engineering contributions to the cotton industry through development of new technologies in support of the global cotton industry by providing new machines and process control technology.

**Robert O. Evans, P.E.**, professor and department extension leader, Biological and Agricultural Engineering Department, North Carolina State University, Raleigh, North Carolina, for his outstanding contributions to soil and water engineering as a leader in water table management and drainage water quality through teaching and research.

**Gary M. Hyde**, professor emeritus, Biological Systems Engineering Department, Washington State University, Pullman, Washington for his dedication to the advancement of the profession, and for his varied contributions to engineering research and education involving the development of equipment and machinery, and investigations into the underlying properties and relationships in impact drainage to fruits and vegetables.

**Digivr S. Jayas, P.Eng.**, associate vice-president of research, distinguished professor, Canada research chair in Stored-Grain Ecosystems, interim director, Richardson Center for Functional Foods and Nutraceuticals, Biosystems Engineering Department, University of Manitoba, Winnipeg, Manitoba, Canada, for his dedication and outstanding accomplishments as a researcher, teacher, administrator, author, and contributor to technical societies in the areas of field and grain handling, drying and storage.

**Rameshwar S. Kanwar**, professor and department chair, Agricultural and Biosystems Engineering Department, Iowa State University, Ames, Iowa, for his distinguished career in soil and water engineering as a researcher, teacher, administrator, and developer of water management programs worldwide.

**John L. Merriam, P.E.**, professor emeritus, Bioresource and Agricultural Engineering Department, California Polytechnic State University, San Luis, Obispo, California for his dedicated service and extraordinary contributions for increased agricultural production in the United States and internationally through his widely accepted irrigation water management programs.

**John F. Reid**, manager, Intelligent Vehicle Systems, Product Technology, John Deere Technology Center, Deere and Company, Moline, Illinois, for his leadership activities in the promotion of automation technologies for agricultural systems.

**John C. Sager**, bioregenerative life support research project manager and senior biological engineer, National Aeronautics and Space Administration (NASA), Kennedy Space Center, Titusville, Florida, for his outstanding contributions as a leader and expert in the field of controlled environment and life support systems.

**Mark D. Schrock, P.E.**, professor, Biological and Agricultural Engineering Department, Kansas State University, Manhattan, Kansas, for his distinguished accomplishments and contributions as an engineering educator, advisor, mentor, researcher, and farmer.

**Adel Shirmohammadi**, professor, Biological Resources Engineering Department, University of Maryland, College Park, Maryland, for his outstanding accomplishments in soil and water conservation engineering, watershed hydrologic and water quality modeling, and for innovative leadership of agricultural programs as a researcher, teacher, faculty and Society member.

**Terry J. Siebenmorgen, P.E.**, professor, Food Science Department and director, Rice Processing Program, University of Arkansas, Fayetteville, Arkansas, for his outstanding contributions to agricultural engineering research, teaching, and outreach programs that have advanced the fundamental understanding and improvement of rice drying and milling operations worldwide.

**Fedro S. Zazueta**, director and professor, Office of Academic Technology, University of Florida, Gainesville, Florida for his visionary leadership and outstanding contributions to computer applications in agriculture and irrigation through research, teaching, and extension programs.

## **2004 Fellow Recipient Citations**

### **Fellows Induction Ceremony in Ottawa, Ontario, Canada**

**Claude E. Brown, P.E.**, president, Ag Industrial Manufacturing, Inc., Lodi, California, for his innovative contributions to the agricultural industry which have greatly improved harvesting and product handling of crop sensitive agricultural products.

**Kenneth L. Campbell, P.E.**, professor and associate chair, Agricultural and Biological Engineering Department, University of Florida, Gainesville, Florida, for his expertise and accomplishments in the area of soil and water engineering through research, teaching, technology transfer and service activities.

**George A. Duncan, P.E.**, extension specialist and extension professor, Biosystems and Agricultural Engineering Department, College of Agriculture, Kentucky Cooperative Extension Service, University of Kentucky, Lexington, Kentucky, for his dedication and outstanding contributions as an agricultural engineer involved in research and extension programs in the area of structure and environment, and computer applications.

**Robert C. Lanphier III**, president and chief executive officer, AGMED Inc., Springfield, Illinois, for his dedication and commitment to the engineering profession, and leadership contributions in the application of electronic technology to agriculture, which helped establish a new agricultural industry called "Precision Agriculture".

**Donald K. McCool, P.E.**, supervisory agricultural engineer and research leader, USDA-ARS, Pacific West Area; adjunct professor, Biological Systems Engineering Department, Washington State University, Pullman, Washington, for his outstanding contributions as an engineer, adjunct professor, researcher and authority in erosion control.

**R. Vance Morey**, professor, Biosystems and Agricultural Engineering Department, University of Minnesota, St. Paul, Minnesota, for his dedication and advancement to the profession, and for outstanding contributions as a teacher, administrator, and researcher involved in the areas of postharvest handling and storage, grain quality, biomass utilization and renewable energy.

**Ronald T. Schuler, P.E.**, professor, Biological Systems Engineering Department, University of Wisconsin, Madison, Wisconsin, for his outstanding contributions to academia through classroom instruction, research, administration, and extension, and for distinguished service to the Society.

**John B. Solie, P.E.**, Sarkey's distinguished professor, Biosystems and Agricultural Engineering Department, Oklahoma State University, Stillwater, Oklahoma, for his outstanding contributions to biological and agricultural engineering as a researcher and educator involved in precision agriculture, machinery design, optical sensor-based variable rate application systems, pesticide and fertilizer application equipment, and horticultural crop harvesting and handling systems.

**Marvin L. Stone**, regents professor, Biosystems and Agricultural Engineering Department, Oklahoma State University, Stillwater, Oklahoma, for his exemplary research, teaching, visionary designs and leadership in developing electronic communication standards for agricultural and off-road equipment.

**Paul N. Walker, P.E.**, professor, Agricultural and Biological Engineering Department, Pennsylvania State University, University Park, Pennsylvania, for his outstanding dedication and contributions as a researcher, educator, aquacultural and food biological engineer, and pioneering leader in the study and implementation of precision agriculture.

**Fredrick W. Wheaton, P.E.**, professor and chair, Biological Resources Engineering Department, University of Maryland, College Park, Maryland, for his leadership and outstanding contributions in biological engineering through teaching, research and extension, and for pioneering work involved in aquacultural engineering.

## **2003 Fellow Recipient Citations**

### **Fellows Induction Ceremony in Las Vegas, Nevada**

**James L. Baker**, professor, Agricultural and Biosystems Engineering Department, Iowa State University, Ames, Iowa, for his outstanding contributions and leadership to water quality engineering as a scholar, teacher, researcher, caring mentor to students and faculty, and for his dedicated service to the Society.

**Charlie G. Coble, P.E.**, professor emeritus, Agricultural Engineering Department, Texas A&M University, College Station, Texas, for his distinguished service to the agricultural engineering profession as an educator, researcher, and consultant involved with improved mechanical systems for harvesting of vegetables, biomass energy and the production of ethanol, and for his dedication to the Society.

**Gale A. Holloway, P.E.**, director, product development and product manager, CNH Global, Burr Ridge, Illinois, for his personal commitment to the success of the Society and for his outstanding accomplishments and leadership within the agricultural equipment industry.

**Derrel L. Martin, P.E.**, professor, Biological Systems Engineering Department, University of Nebraska, Lincoln, Nebraska, for his dedication and contributions to soil and water science, engineering research, teaching and outreach.

**Kenneth G. Renard, P.E.**, adjunct professor, Agricultural and Biosystems Engineering Department, University of Arizona, and retired hydraulic engineer, USDA-ARS, Southwest Watershed Research Center, Tucson, Arizona, for his dedication, international reputation, and outstanding accomplishments as a researcher, engineer and expert in erosion prediction and arid land hydrology.

**C. Alan Rotz, P.E.**, agricultural engineer and lead scientist, USDA-ARS, Pasture Systems and Watershed Management Research Unit, and adjunct professor, Agricultural and Biological Engineering Department, Pennsylvania State University, University Park, Pennsylvania, for his exemplary contributions to the advancement and well-being of the agricultural industry through development of a wide range of technologies and management strategies for crop and animal production.

**Ted H. Short, P.E.**, professor and associate chair, Food, Agricultural and Biological Engineering Department, Ohio State University, Wooster, Ohio, for his outstanding contributions to the academic environment through classroom instruction, research, administration, and for his contributions to the Society.

**Barrie L. Smith**, president, Barrie L. Smith Consulting, Moline, Illinois, for his outstanding contributions to the development and application of voluntary standards and for exemplary leadership toward the revitalization of the Society's Cooperative Standards Program.

**Kenneth R. Swartzel**, director, North Carolina Technology Development Initiative-UNC Office of the President; William Neal Reynolds distinguished professor and head, Department of Food Science, North Carolina State University, Raleigh, North Carolina, for his outstanding contributions to food engineering in the area of kinetic theory and thermal processing of foods as a scientist, engineer and educator.

**Michael F. Walter**, professor and department chair, Biological and Environmental Engineering Department, Cornell University, Ithaca, New York, for his leadership in managing change for disciplinary-based biological engineering, and for significant contributions to international agriculture, water management programs, academic engineering administration and teaching.

## 2002 Fellow Recipient Citations

### Fellows Induction Ceremony in Chicago, Illinois

**Harold R. Duke**, retired agricultural engineer, USDA-ARS, AERC-Colorado State University, Ft. Collins, Colorado, for his dedication and research contributions to agricultural engineering in the areas of chemical and energy management, irrigation water management, soil water flow measurements, and electronic computer applications.

**Ronald L. Elliott, P.E.**, professor and head, Biosystems and Agricultural Engineering Department, Oklahoma State University, Stillwater, Oklahoma, for his innovative research programs involving soil and water engineering, along with his exceptional teaching and educational leadership accomplishments.

**Arthur T. Johnson, P.E.**, professor, Biological Resources Engineering Department, University of Maryland, College Park, Maryland, for his outstanding accomplishments in biological engineering research, teaching, and for his service to the profession.

**Karl-Hans Kromer**, professor emeritus, University of Bonn, Bonn, Germany, for his outstanding contributions to the international community regarding agricultural engineering, graduate educational programs, technical development projects, and research contributions concerning horticultural crops, sugar beet and forage crop mechanization.

**Bailey W. Mitchell**, research agricultural engineer, USDA-ARS, southeast poultry Research Laboratory, Athens, Georgia, for his outstanding service to the agricultural engineering profession and the poultry industry as a teacher and researcher, and for his contributions to the Society.

**Marvin R. Paulsen, P.E.**, professor and associate department head, Agricultural Engineering Department, University of Illinois, Urbana, Illinois, for his dedication and exceptional service to university students and colleagues in the agricultural engineering profession, and for his exceptional research accomplishments in the areas of grain quality and measurements, and the effects of drying, handling and transport on quality changes.

**John V. Perumpral**, William S. Cross, Jr., Professor and head, Biological Systems Engineering Department, Virginia Tech, Blacksburg, Virginia, for his outstanding contributions to the engineering profession as a dedicated teacher of agricultural machinery and soil dynamics, and for his accomplishments as educational and research leader.

**Virendra M. Puri**, professor, Agricultural and Biological Engineering Department, Pennsylvania State University, University Park, Pennsylvania, for his outstanding engineering accomplishments in research and education, and for his many contributions to the agricultural industry, the Society, and to other professional organizations.

**Luther R. Wilhelm, P.E.**, interim associate dean, College of Engineering, professor, Biosystems Engineering Department, University of Tennessee, Knoxville, Tennessee, for his many contributions to engineering education and the engineering profession as a teacher and researcher, and for his dedicated service to the Society.

**Frank M. Zoz, P.E.**, consultant and retired project engineer, John Deere Product Engineering Center, Waterloo, Iowa, for his life-long accomplishments in agricultural engineering, and for his pioneering research in the area of traction and tractor performance prediction.

## **2001 Fellow Recipient Citations Fellows Induction Ceremony in Sacramento, California**

**Eddie C. Burt**, retired research agricultural engineer, USDA-ARS, National Soil Dynamics Laboratory, Auburn, Alabama, for outstanding contributions to the agricultural engineering profession for his pioneering research involving off-road traction, soil compaction, and machine systems.

**Ray Nolan Clark, P.E.**, laboratory director, USDA-ARS, Conservation and Production Research Service, Bushland, Texas, for his innovative leadership of agricultural research programs and numerous technical contributions to the agricultural engineering profession in the areas of water conservation, wind energy utilization, soil-plant-water relationships, feed-yard runoff, animal waste control and dry-land irrigated crop production.

**Robert J. Gustafson, P.E.**, associate dean, College of Engineering, Ohio State University, Columbus, Ohio, for his distinguished work and outstanding accomplishments in education, extension, research and administration as a teacher, and researcher in the areas involving the prevention of stray voltage, electricity and energy applications in agriculture, grain drying, grain quality, and numerical modeling, and as a Society leader.

**Russell H. Hahn, P.E.**, retired director of standards, American Society of Agricultural Engineers (ASAE), St. Joseph, Michigan, for accomplishments as a design engineer and for his organizational leadership skills in formulating procedures for the guidance of Society standards activities, and in recognition of his stature as a respected voice for consistent incorporation of worldwide standards.

**James K. Koelliker, P.E.**, professor and head, Biological and Agricultural Engineering Department, Kansas State University, Manhattan, Kansas, for his outstanding contributions as a researcher in the areas of hydrologic sciences, water resources management and water quality assessment, along with his dedication as a teacher, student advisor, and university administrator in the biological and agricultural engineering profession.

**Gary W. Krutz, P.E.**, professor, Agricultural and Biological Engineering Department, Purdue University, West Lafayette, Indiana, for his outstanding contributions to the agricultural engineering profession as an educator, and for his research involving traditional farm machinery automation along with the development of non-contact electronic sensors to assure food quality.

**Walter J. Rawls**, research leader and hydrologist, USDA-ARS, Hydrology & Remote Sensing Laboratory, Beltsville, Maryland, for his outstanding research in soil and water conservation engineering, and for innovative leadership of various agricultural research programs, which include the measurement and application of soil parameters for hydrologic solutions.

**David B. Smith, P.E.**, professor and agricultural engineer, Agricultural and Biological Engineering Department, Mississippi State University, Mississippi State, Mississippi, for his distinguished accomplishments as a professor of agricultural engineering and as a researcher at USDA involved with chemical applications in agriculture.

**K.C. Ting, P.E.**, professor and chair, Department of Food, Agriculture, and Biological Engineering, Ohio State University, Columbus, Ohio, for his distinguished accomplishments as an educator, and for his research involving the automation and systems analysis to bio-processing and bio-production, computerized decision support systems, advanced life support systems for space exploration, food manufacturing, and bio-environmental systems.

## **2000 Fellow Recipient Citations Fellows Induction Ceremony in Milwaukee, Wisconsin**

**Eldridge R. Collins, Jr.**, professor and extension agricultural engineer, Biological Systems Engineering Department, Virginia Polytechnic Institute and State University, Blacksburg, Virginia, for his outstanding accomplishments in teaching, extension, advisory and research contributions in the areas of agricultural waste management, water quality, and livestock systems and facilities.

**John S. Cundiff, P.E.**, professor, Biological Systems Engineering Department, Virginia Polytechnic Institute and State University, Blacksburg, Virginia, for his contributions to the engineering profession through his dedication to teaching, development of Society standards, planning of specialty conferences, and for his research involving a broad range of activities from production to harvesting, processing and storage of tobacco, peanuts, and other agricultural crops.

**Elbert C. Dickey, P.E.**, interim dean and director of cooperative extension, University of Nebraska, Lincoln, Nebraska, for his dedication and pioneering efforts in advancing the implementation of conservation tillage, his innovative programming in Cooperative Extension, and for his service to the Society.

**Clifford A. Flood, Jr.**, associate professor and chair, Biosystems Engineering Department, Auburn University, Auburn, Alabama, for his significant contributions as an educator, and for his research work involving the application of solar energy in poultry and other livestock housing, and on the measurement of equilibrium moisture properties of agricultural materials.

**John W. Hummel, P.E.**, agricultural engineer, USDA-ARS Cropping systems and Water Quality Research Unit, Columbia, Missouri, for his outstanding contributions as an agricultural engineer in providing leadership to the development and support of a research program devoted to new soil and crop sensors for precision agriculture.

**Clarence E. Johnson, P.E.**, professor emeritus, Biosystems Engineering Department, Auburn University, Auburn, Alabama, for his superior contributions to agricultural engineering as a teacher, researcher, and extender of knowledge involving pioneering research in soil dynamics, and for his dedication to the Society.

**J. Kent Mitchell, P.E.**, professor, Agricultural Engineering Department, University of Illinois, Champaign, Illinois, for his dedication and excellent service to the agricultural engineering profession through teaching and research involving erosion processes and control, and in water quality monitoring.

**G.S. Vijaya Raghavan, P.E.**, professor and chair, Department of Agricultural and Biosystems Engineering, McGill University, Ste-Anne-de-Belleville, Quebec, Canada, for his dedication and outstanding contributions and service to the engineering profession worldwide and to the Society through his teaching and pioneering research in the areas of soil dynamics, post-harvest technology, drying, thermal processing of agricultural commodities, and electro-technology.

**R. Paul Sing**, professor, Food Engineering Department of Biological and Agricultural Engineering, university of California, Davis, California, for his outstanding accomplishments as an educator and researcher in the area of heat and mass transfer related to food processing, and for his dedicated service to the Society.

**Linus R. Walton, P.E.**, associate dean for administration, College of Agriculture, University of Kentucky, Lexington, Kentucky, for his outstanding leadership and achievements as an administrator, educator, extender of knowledge, and researcher in the development of low-cost, labor-saving equipment and procedures for curing and handling burley tobacco.

## **1999 Fellow Recipient Citations**

### **Fellows Induction Ceremony in Toronto, Ontario, Canada**

**Harold L. Brock**, engineering consultant, Waterloo, Iowa, for his professional stature, service, and outstanding achievements in industry, education, and community endeavors that have made him a member that enhances the Society's image.

**Allen R. Dedrick**, associate deputy administrator, National Resources and Substantial Agricultural Systems, USDA-ARS NPS, Beltsville, Maryland, for his outstanding national and international efforts and achievements in irrigation standardization and for creative leadership to obtain multi-agency and personnel focus on improved use of irrigation water.

**David T. Hill, P.E.**, professor, Biosystems Engineering Department, Auburn University, Auburn, Alabama, for his outstanding agricultural engineering contributions as a leader, educator and researcher in the advancement of animal waste management systems.

**Charles A. Onstad, P.E.**, area director, Southern Plains Area, USDA-ARS, College Station, Teaxs, for his outstanding research achievements in soil and water conservation engineering, and for innovative leadership of agricultural research programs.

**Donald L. Peterson, P.E.**, research agricultural engineer, USDA-ARS, Kearneysville, West Virginia, for his outstanding contributions to the agricultural engineering profession and for development and research focused on agricultural mechanical harvesting equipment and processes.

**Keith E. Saxton, P.E.**, research engineer, USDA-ARS, Water Conservation Research Unit, Washington State University, Pullman, Washington, for his outstanding leadership achievements as an agricultural engineer and extender of knowledge, and research and development contributions in agricultural hydrology to predict and control wind and water erosion.

**James S. Townsend, P.E.**, president, SEATAB Consulting Services, Winnipeg, Manitoba, Canada, for his outstanding dedication to teaching and leadership research contributions in the areas of tillage, harvesting, farm machine development, and energy conservation worldwide.

**Lalit R. Verma, P.E.**, H. Rouse Caffey Professor and department head, Biological and Agricultural Engineering Department, Louisiana State University, Baton Rouge, Louisiana, for his outstanding contributions in agricultural engineering as an innovative educator and administrator, and dedicated researcher in the areas of forage conditioning, rice processing grain drying, by-product utilization and alternate energy sources, and Society leader.

## **1998 Fellow Recipient Citations Fellows Induction Ceremony in Orlando, Florida**

**Delmar D. Fangmeier, P.E.**, professor emeritus, Agricultural and Biosystems Engineering Department, University of Arizona, Tucson, Arizona, for his distinguished accomplishments as an international leader in the agricultural engineering profession as a teacher and researcher in soil and water conservation engineering, development of border irrigation and surface irrigation techniques, and for his service to the Society..

**Carroll E. Goering, P.E.**, professor, Department of Agricultural Engineering, University of Illinois, Urbana, Illinois, for his outstanding leadership and accomplishments in the agricultural engineering profession in the area of education, research, farm machinery design, extender of knowledge, and for service to the Society.

**Richard O. Hegg, P.E.**, national program leader engineer, USDA CSREES, Washington, DC, for his outstanding national program leadership at USDA CSRRES and contributions to the engineering profession as a researcher in the area of animal waste management, as an educational leader in the development of curriculum modernization for the discipline of agricultural and biological engineering, and for his service to the Society.

**Donald L. Henderson, P.E.**, general manager, Motores John Deere, Torreon, Coahuila, Mexico, for his leadership and outstanding accomplishments in the agricultural manufacturing industry in the area of design, development and production of agricultural tractors, lawn and garden equipment, and for his service to the Society.

**Raymond L. Huhnke, P.E.**, professor and extension agricultural engineer, Biosystems and Agricultural Engineering Department, Oklahoma State University, Stillwater, Oklahoma, for his outstanding contributions in extension, education, and applied research in the area of animal production systems, farm structures, water quality, forage harvesting, handling and storage.

**Stewart W. Melvin, P.E.**, department head and professor, Agricultural and Biosystems Engineering Department, Iowa State University, Ames, Iowa, for his outstanding nationally and internationally scientific contributions and leadership in the area of soil and water management and environmental issues related to crop and livestock production.

**Leroy K. Pickett, P.E.**, senior product safety engineer, crop harvesting equipment, Case Corporation, East Moline, Illinois, for his outstanding contributions to the agricultural engineering profession and agricultural machinery industry as a leader in crop harvest machinery design, development and safety.

**Gajendra Singh**, professor, Asian Institute of Technology, Bangkok, Thailand, for his outstanding contributions and worldwide leadership in education, administration and research in the areas of mechanization for developing countries, energy inputs in agriculture, design of farm equipment, and application of system techniques to agricultural systems.

**James L. Steele**, agricultural engineer and research leader, USDA-ARS, Grain Marketing and Production Research Center, Manhattan, Kansas, for his outstanding worldwide contributions as an agricultural engineer and research leader in the areas of crop drying and storage, and systems design to inspect and determine quality aspects of grain and grain products.

## **1997 Fellow Recipient Citations**

### **Fellows Induction Ceremony in Minneapolis, Minnesota**

**James C. Barker, P.E.**, professor and extension specialist, Biological and Agricultural Engineering Department, North Carolina State University, Raleigh, North Carolina, for his outstanding contributions as a professor and extension specialist in biological and agricultural engineering, and research leadership in the areas of animal waste management and water quality protection.

**Dale A. Bucks**, national program leader, Water Quality and Water Management, USDA-ARS, Beltsville, Maryland, for his outstanding contributions as a national program leader at the USDA-ARS, and for his worldwide pioneering research in the areas of water quality, technology transfer of microirrigation, sustainable agricultural production systems, and the development of alternative crops for desert climates.

**James C. Converse, P.E.**, professor and chair, Biological Systems Engineering Department, University of Wisconsin, Madison, Wisconsin, for his outstanding engineering and leadership contributions in teaching, administration, and research in the area of on-site treatment of wastewater and animal waste management.

**Radhey Lal Kushwaha, P.E.**, professor, Agricultural and Bioresource Engineering Department, University of Saskatchewan, Saskatchewan, Canada, for his outstanding and recognized worldwide accomplishments as a teacher and researcher in the area of machinery systems and mechanization with an emphasis in soil dynamics, ergonomics, and tribology.

**Clarence W. Richardson, P.E.**, laboratory director, USDA-ARS, Temple, Texas, for his administrative leadership as laboratory director of the USDA-ARS, and internationally recognized research accomplishments in the areas of erosion, hydrology, water quality and weather simulation.

**Robert D. von Bernuth, P.E.**, professor and chair, Agricultural Engineering Department, Michigan State University, East Lansing, Michigan, for his outstanding dedication as a professor and administrator in biosystems and agricultural engineering, and for his visionary leadership and research accomplishments in the irrigation industry.