ARS Science Hall of Fame

September 16, 2015

Agricultural Research Service
U.S. Department of Agriculture

A special website is available that features photographs and biographies of all ARS Science Hall of Fame inductees since the inaugural year of 1986. Special features include browse and search functions and video clips from interviews with some members of the Hall of Fame.

Please visit www.ars.usda.gov/careers/hof/

Agricultural Research Service
SCIENCE HALL OF FAME

The ARS Science Hall of Fame was inaugurated in 1986. We determined that each succeeding year, one or more present or former scientists with the Agricultural Research Service could be selected, subject to the following criteria:

The selectee made widely recognized impact on agricultural research by the solution of a significant agricultural problem through research.

The selectee is a person whose scientific accomplishments and stature continue to affect the agricultural research community and/or influence the development of science-based agricultural policy.

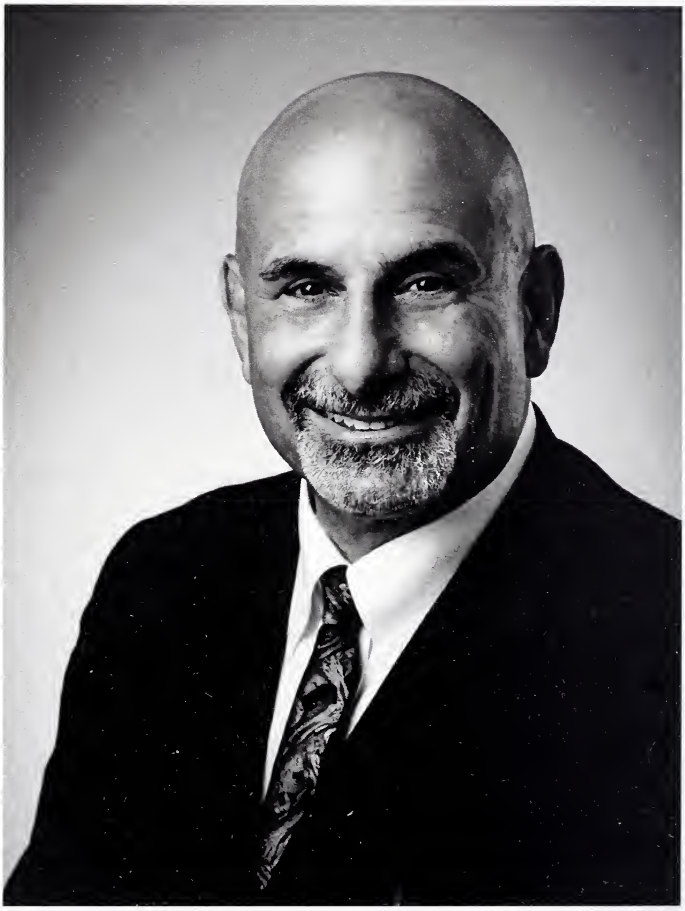
The selectee's character and record of achievement have brought major recognition and credibility to ARS and/or USDA, and are worthy of emulation by younger agricultural scientists.

The selectee's achievements must be or have been nationally and/or internationally recognized by peers in the scientific community.

Today we honor four outstanding scientists by inducting them into the Science Hall of Fame. A plaque citing the achievements of each will be added to the permanent exhibit in the George Washington Carver Center, Beltsville, MD.

Chavonda Jacobs-Young

Chavonda Jacobs-Young
Administrator



2015

Science Hall of Fame

Leon V. Kochian

Center Director and Research Leader
Robert W. Holley Center for Agriculture and Health
Ithaca, NY

For internationally recognized pioneering work using molecular biology, genetics, and plant breeding to improve crop yields on marginal soils in developing countries.

Leon V. Kochian is a world leader in research on the adaptation of cereal crops to marginal soils, especially those limited by mineral deficiencies. He has contributed seminal findings towards a better understanding of how plant ion transporters function and are regulated, as well as the role root biology and rhizosphere processes play in mineral nutrition.

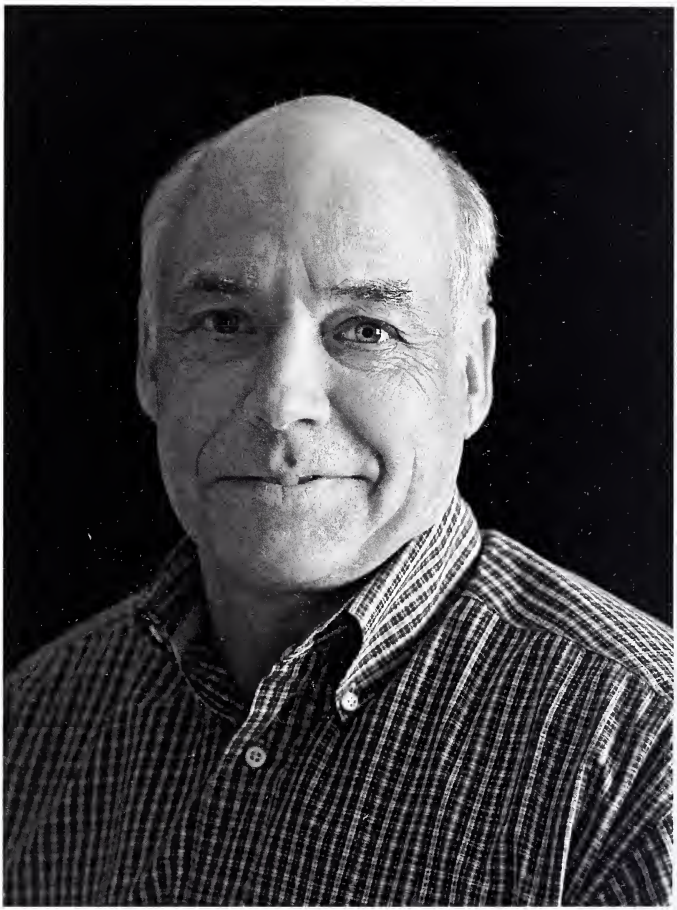
Some of his most important work has been unraveling the strategies that plants use to tolerate toxic metals in the highly weathered soils of the tropics and subtropics—regions where many developing countries are located and food security is most tenuous. Kochian and his group carried out the pioneering studies that identified the physiological mechanisms and the associated genes that allow the major cereal crops (maize, rice, sorghum, and wheat) to tolerate toxic aluminum levels in acid soils.

Kochian led an international group of plant molecular biologists, geneticists, plant physiologists, and plant breeders from Brazil, Africa, the Philippines, and Japan who are putting these discoveries to use to improve cereal crop yields in sub-Saharan Africa.

His work on plant aluminum tolerance has been recognized as one of the National Science Foundation's "Nifty 50" discoveries.

He also led a team that identified the first plant potassium transport gene. This discovery revolutionized the field of plant potassium transport and nutrition research.

Among his many honors are ARS Early Career Research Scientist and ARS Senior Research Scientist, Secretary of Agriculture's National Award – Environmental Protection, and Presidential Rank Award. He is a Fellow of the American Association for the Advancement of Science and the American Society of Plant Physiology.



2015

Science Hall of Fame

Donald R. Ort

Location Coordinator and Research Leader
Global Change and Photosynthesis Research Unit
Urbana, IL

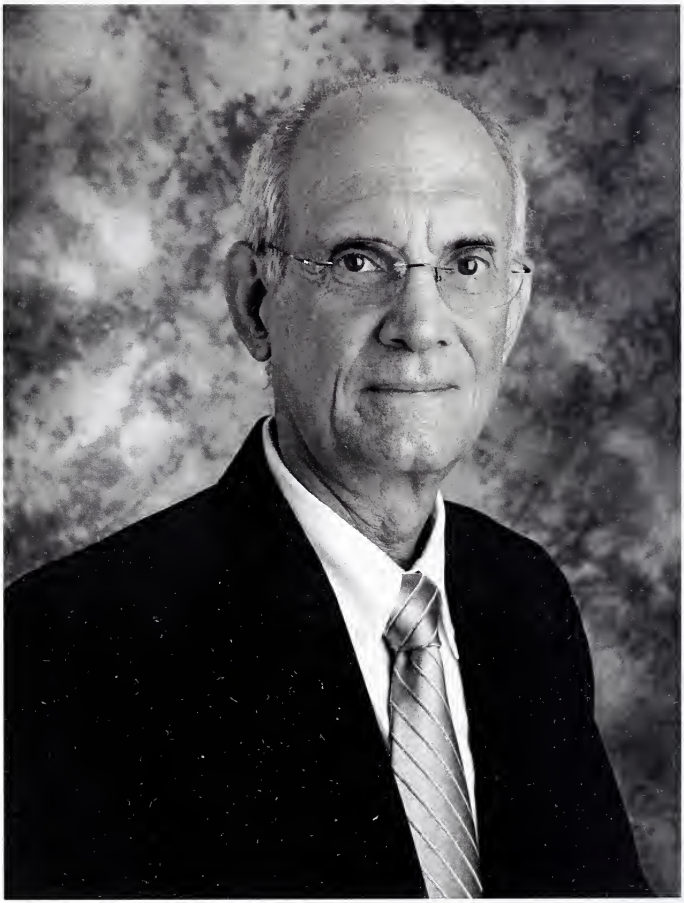
For outstanding leadership, vision, and productivity in advancing research in the global climate change impacts on photosynthesis and crop production.

Donald R. Ort has devoted his considerable ability and energy to unraveling how changes in atmospheric composition affect the myriad of biochemical processes contributing to photosynthesis and how these changes modulate the growth of plants and crop productivity.

Ort has served as research leader since 1997 and location coordinator since 1999, and during that time, he and his colleagues have provided data across multiple seasons on the impact of individual and interacting climate change factors on the phenology, photosynthetic physiology, light and water use efficiency, biomass accumulation, and yield of both C3 and C4 crops, principally soybean.

Ort has considered an array of "redesigns" to improve photosynthetic efficiency and performance with a primary focus on improving the productivity of food and bioenergy plants. His proof of concept demonstrations—that improved photosynthesis improves yield under field conditions— has helped launch a global interest in this concept, which has in turn attracted funding initiatives from Federal agencies and private foundations in the United States, Europe, Australia, China, and Japan.

Among Ort's many prestigious awards are ARS Senior Research Scientist of the Year, University of Illinois ACES Service Award, University of Illinois Team Research Award, and the American Society of Plant Biologists' Kettering Award for excellence in the field of photosynthesis. He is a Fellow of the American Society of Plant Biologists and the American Association for the Advancement of Science and a Distinguished Investigator with the Chinese Academy of Sciences. He currently holds the University of Illinois Robert Emerson Professorship of Plant Biology and Crop Sciences.



2015

Science Hall of Fame

Ralph Scorza

Supervisory Research Horticulturist
Appalachian Fruit Research Laboratory
Kearneysville, WV

For pioneering the integration of biotechnological and traditional breeding for the development of new tree fruit cultivars with novel tree architectures and fruit traits.

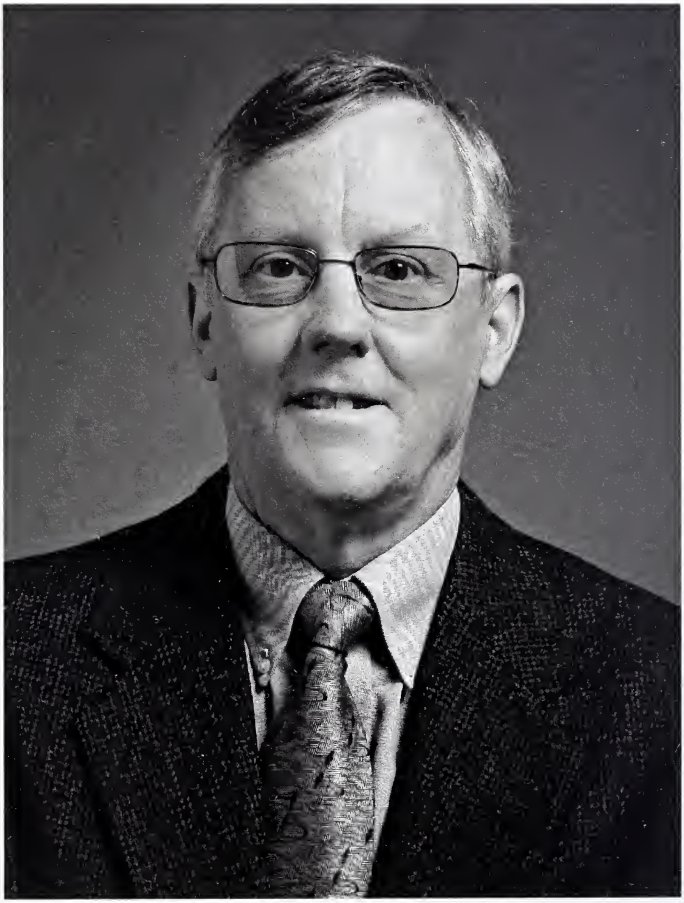
Ralph Scorza is recognized nationally and internationally for pioneering work in the genetic manipulation of tree architecture, for the development of new stone fruit varieties, and for applying biotechnology to improve woody perennial fruit species.

Scorza has released 12 varieties of peaches, nectarines, and plums, including those with new architectures, disease resistance, and improved flavors. Several have become industry standards.

Scorza has developed the 'FasTrack' breeding system that dramatically reduces the generation time for stone fruit species using a biotech approach to stimulate early flowering and fruiting. In plum the generation cycle has been reduced from over four years to less than one year, greatly accelerating the development of new tree fruit varieties.

Scorza has developed a genetically engineered plum variety, 'HoneySweet', that is highly resistant to plum pox virus. It is the first genetically engineered temperate woody fruit crop deregulated for use in the United States and abroad. Plum pox is the most serious disease of stone fruits and has devastated stone fruit production in Europe.

Scorza has authored or coauthored around 230 research publications and holds seven plant patents and four biotech utility patents. Among his many prestigious awards are the Arthur S. Flemming Award, the National Peach Council's Carroll R. Miller Award, and three Secretary of Agriculture Honor Awards. He is a Fellow of the American Society for Horticultural Science.



2015

Science Hall of Fame

Scott R. Yates

Supervisory Soil Scientist and Research Leader
U.S. Salinity Laboratory
Riverside, CA

For exceptional research, leadership, and technology transfer reducing the adverse environmental impacts from soil fumigation while maintaining pest control efficacy.

Scott R. Yates is an internationally recognized expert in reducing the adverse effects of soil fumigation and in mitigating atmospheric emissions. When methyl bromide was first identified as an ozone-depleting substance, little was known about its environmental fate and transport. Yates was instrumental in showing that emissions from soil fumigation were a major source of methyl bromide released to the atmosphere and in developing new management strategies that ensure effective pest control while minimizing fumigant released to the atmosphere.

Yates's research has provided the bulk of the information and technology that forms the basis of soil fumigation regulations, and includes authorship of more than 250 peer-reviewed publications and a patent for his novel approach to mitigate methyl bromide emissions during commodity fumigation. His technique to measure fumigant movement through agricultural films has become an ASTM Standard Method, which has been adopted by industry for measuring film permeability. His research has been cited in over 480 scientific articles by authors representing more than 90 nations—a remarkable accomplishment given the specialized topic area within the scientific research community.

Yates has been honored with numerous prestigious awards including American Chemical Society's Award for Innovation in Chemistry of Agriculture, Federal Laboratory Consortium's Technology Transfer Outstanding Partnership Award, and Soil Science Society of America's Soil Science Applied Research Award. He is a Fellow of the American Association for the Advancement of Science, the Soil Science Society of America, and the American Society of Agronomy.

ARS Science Hall of Fame

1986

Edward F. Knipling

For pioneering research and leadership in development of the sterile insect technique, which led to the eradication of the screwworm, and of other technologies to suppress and manage insect pests.

1987

Howard L. Bachrach

For pioneering research on the molecular biology of foot-and-mouth disease that led to development of the world's first effective subunit vaccine for any disease of animals or humans through the use of gene splicing.

Myron K. Brakke

For consistent, career-long valuable contributions to the science of virology, particularly plant virology.

Glenn W. Burton

For outstanding achievements in forage and turf science, which have had extraordinary effects on the forage-based cattle industry, the turf industry, and agriculture worldwide.

Wilson A. Reeves

For outstanding research and leadership in the field of textile chemical finishing that have significantly benefited agriculture and consumers.

Earnest R. Sears

For pioneering work in wheat genetics and for discoveries on chromosomal mechanisms that established standards in animal, plant, and human genetics.

Orville A. Vogel

For development of the first useful semidwarf wheats and of innovative production systems that made the Pacific Northwest a major source of soft white wheat, inspired similar research efforts throughout the world, and sparked the Green Revolution.

Cecil H. Wadleigh

For elucidating the mechanisms through which crops respond to salinity and water stress and for inspired planning and leadership that enabled and motivated those who worked with him to expand and make use of knowledge of soils, water, and air and their interactions with plants.

1988

Francis E. Clark

For outstanding research leading to greater understanding of soil, plant, and microbial interactions and of nutrient cycling in terrestrial ecosystems.

Edgar E. Hartwig

For research in soybean breeding and genetics that has been a major factor in soybeans becoming the second most valuable U.S. crop and particularly for developing cultivars that thrive in the South.

Ralph E. Hodgson

For significant contributions to the knowledge of ruminant nutrition and for visionary leadership, both domestic and international, in the animal industries.

Hamish N. Munro

For career-long contributions to the science of nutrition, particularly on the relationship of dietary protein and iron to the health of the elderly, and for promotion of studies on aging.

Jose Vicent-Chandler

For research leading to new and greatly improved production systems for beef, milk, coffee, plantains, and rice for Puerto Rico and Caribbean countries.

1989

Douglas R. Dewey

For world leadership in genetics and taxonomy of the Triticeae tribe of grasses and for development of the cytogenetic basis for creating new grass hybrids.

Theodor O. Diener

For conceptualizing and discovering viroids, for leading research on viroid detection and control, and for inspiring new approaches in the search for causes of several serious diseases affecting plants, livestock, and humans.

Karl H. Norris

For developing principles and instruments using the electromagnetic wave spectrum to make rapid nondestructive measurements for evaluating quality of agricultural products.

John F. Sullivan

For engineering contributions to the food-processing and preservation industries, including development of instant potato flakes and of batch and continuous-explosion puffing.

1990

Theodore C. Byerly

For extraordinary contributions as a scientist, research leader, and administrator to the success of agricultural research programs and advances in U.S. and world agriculture.

Gordon Dickerson

For research contributions widely used by breeders to increase production efficiency of cattle, sheep, swine, and poultry.

Robert W. Holley

For isolation and characterization, including the first nucleotide sequence, of transfer ribonucleic acid (tRNA).

Virgil A. Johnson

For outstanding contributions to development of superior bread wheat cultivars and of improved wheat germplasm and for vigorous promotion of national and international cooperation among wheat breeders.

George F. Sprague

For outstanding contributions to effective methods of hybrid corn breeding and germplasm improvement.

1991

John H. Weinberger

For outstanding lifelong contributions in development of fruit varieties and fruit-breeding technology.

Walter H. Wischmeier

For developing the Universal Soil Loss Equation, which has been widely used for three decades worldwide in conservation and management of our natural resources.

1992

Raymond C. Bushland

For pioneering research leading to screwworm eradication by the sterile insect technique and for research leading to control of typhus vectors.

Lyman B. Crittenden

For significant contributions to retroviral genetics, transgenic animal development, and genome mapping in poultry.

Arnel R. Hallauer

For increasing understanding and use of quantitative genetics in plant breeding, which has led to development of many superior corn hybrids worldwide.

1993

John R. Gorham

For scientific leadership and studies that have resulted in solutions of disease control problems and have advanced the basic knowledge of viral and genetic diseases in humans and animals.

Sterling B. Hendricks

For significant contributions as a chemist, physicist, mathematician, plant physiologist, geologist, and mineralogist.

Clair E. Terrill

For scientific contributions and worldwide leadership in sheep production research.

1994

Charles N. Bollich

In recognition of superlative accomplishments in rice breeding and genetics and their consequent benefits to American agriculture.

Chester G. McWhorter

For outstanding contributions to American agriculture through basic and applied research that has resulted in improved weed-management technology, increased yields, and reduced cost of production.

Malcolm J. Thompson

For career research contributions in the field of insect and plant steroid biochemistry.

1995

Harry Alfred Borthwick

In recognition of contributions in elucidating the importance of photoperiodic mechanisms controlling flowering in plants.

William M. Doane

For initiating, leading, and conducting research that created new and useful products and led to the establishment of new industries based on agricultural raw materials.

Walter Mertz, M.D.
For contributions and leadership in elucidating the importance to health of several trace elements and promoting research on dietary risk factors for chronic disorders.

1996

Fred W. Blaisdell
For pioneering research and development of improved structures for soil and water conservation.

Herbert J. Dutton
For pioneering research leading to the establishment of soybean oil as the predominant edible vegetable oil in the world.

Charles Jackson Hearn
For developing improved orange, grapefruit, and tangerine varieties used extensively by U.S. citrus producers to replace trees killed by the 1980 freezes and to expand the citrus acreage.

1997

Morton Beroza
For major contributions to the development of environmentally compatible insect control strategies through discovery of lures, attractants, repellents, and pheromones.

R. James Cook
For extraordinary research on sustainable approaches to improve wheat health and for leadership in the transfer of information and technology resulting in solutions to agricultural problems.

William L. Ogren
For outstanding leadership and fundamental contributions to photosynthetic carbon metabolism leading to the discovery of new opportunities to improve the efficiency and productivity of crop plants.

1998

Thomas J. Henneberry
For conducting basic and applied individual and team research that has had sustained global impact on development and implementation of integrated pest management systems.

James H. Tumlinson III
For research that led to eradication of the boll weevil from the southeastern United States and the discovery of the chemical basis of plant-insect-parasite interaction.

1999

Allene R. Jeanes

For microbiological, chemical, and engineering research that created urgently needed, life-saving industrial polymers made from agricultural commodities.

Charles W. Stuber

For pioneering the use of molecular markers in identifying, mapping, and manipulating quantitative trait genes.

Richard L. Witter

For outstanding research contributions and leadership in the field of avian tumor viruses.

2000

Virginia H. Holsinger

For research leading to increased use of milk products and for humanitarian efforts in developing nutritious formulations for international food donation programs.

Marvin E. Jensen

For advancements in irrigation scheduling using computer models to estimate soil-water balance and for advancements in evapotranspiration theory.

Harley W. Moon

For contributions to a fundamental understanding of intestinal diseases in livestock and for development of effective control programs for these diseases.

2001

Lawrence A. Johnson

For pioneering research in developing the first useful technology for gender preselection of animal and human offspring and for outstanding contributions to semen preservation and artificial insemination in swine.

William E. Larson

In recognition of a pioneer who respected soil as a natural resource and devoted a research career toward improving its quality.

William L. Mengeling

For outstanding research contributions and leadership in the field of viral diseases of swine.

2002

George Inglett

In recognition of the development of novel, patented food ingredients including Oatrim and Nutrim, which have had a sustained beneficial effect on the American diet.

K. Darwin Murrell

For landmark research on parasites of veterinary and medical importance, especially trichinellosis of swine, and innovative development and leadership of laboratory and agency-level programs that established and advanced objectives of the Agricultural Research Service.

Stuart O. Nelson

For pioneering research on the dielectric properties of agricultural materials, applications of radio-frequency and microwave energy, and electrical measurements for moisture sensing in cereal grains.

2003

Edward B. Bagley

For outstanding research in rheology and food science that generated fundamental understanding of flow mechanics; and for pioneering concepts in super-absorbent materials that resulted in one of the most successful technology transfers in USDA history.

Janice M. Miller

For pioneering research in understanding, diagnosing, and controlling bovine leukemia, transmissible spongiform encephalopathies, and other chronic infectious or zoonotic diseases of ruminants.

2004

Donald K. Barnes

For remarkable contributions to alfalfa breeding and genetics, mentoring of plant breeding students, and service to ARS and the scientific community.

Ruth Rogan Benerito

For applying physical chemistry to solve problems that led to improved procedures and new uses for renewable resources such as cotton, wood, and paper.

Keith E. Gregory

For outstanding research contributions in genetics and breeding of beef cattle and for leadership of ARS research programs.

2005

Charles W. Beard

For outstanding contributions in poultry health research, in professional and organizational leadership, and in developing biocontainment concepts and systems for animal agriculture.

Nelson A. Cox

For lifetime contributions of distinctive research benefitting the poultry industry and public health through development and transfer of technologies that reduced foodborne pathogens, particularly Salmonella and Campylobacter.

Sigmund Schwimmer

For a distinguished career of scientific excellence in enzymology and its application to food science and human food products and quality.

Tien C. Tso

For outstanding research contributions and leadership in plant physiology and phytochemistry and their use to advance plant science.

2006

Wayne W. Hanna

For significant scientific contributions to U.S. food production and the national recreation industries and for related scientific achievements for research on apomixis and interspecific germplasm transfer.

Ray D. Jackson

For elucidating the basis of soil-plant-water-atmosphere relationships and developing innovative methods to assess and manage crop status through remote sensing.

Vernon G. Pursel

For lifetime contributions to genetic and reproductive development of livestock through pioneering research in genetic engineering and semen preservation.

2007

Johnie N. Jenkins

For pioneering leadership, vision, innovative cotton host plant resistance research and technologies, impact on science, and development and mentoring of young scientists.

Dennis Gonsalves

For pioneering research and leadership in plant pathology and biotechnology to increase agricultural productivity and improve human health.

Janet C. King
For national and international leadership and research achievement in human nutrition.

2008

Robert E. Davis
For meritorious and exemplary contributions to the science of plant pathology and for a dedicated career of service to the Agricultural Research Service.

Andrew N. Sharpley
For pioneering nutrient research leading to the development of agricultural management practices and strategies that are used nationally and internationally to protect water quality.

2009

Max J. Paape
In recognition of exceptional research and leadership that enhanced animal and human health through advances in the identification, control, and prevention of bovine mastitis.

J. Neil Rutger
For demonstrating the usefulness of induction, evaluation, and integration of mutants in rice genetics and breeding.

B.A. Stewart
For exceptional research on soil and crop management practices and outstanding leadership of local, national, and international research programs to sustain our natural resources.

2010

Jitender P. Dubey
For pioneering research in identifying and aiding in the control of protozoan diseases in livestock and humans.

Ronald L. Horst
For research on calcium and vitamin D metabolism resulting in strategies to prevent milk fever in dairy cows and for insight into bone disease.

L. Dale Van Vleck
For extraordinary contributions in expanding quantitative genetic and statistical theory and in developing computational procedures that had an impact in genetic improvement programs for livestock worldwide.

2011

Allen R. Dedrick

For national and international impact and leadership in the development and application of technology for efficient use of scarce water resources worldwide.

Ronald Fayer

For scientific leadership of research on parasites of veterinary and medical importance especially protist pathogens affecting food animals and food safety and for leadership of laboratory and agency programs that promoted the objectives of the Agricultural Research Service.

Ronald F. Follett

For outstanding research contributions in the enhancement of soil, water, and air quality.

2012

Larry V. Cundiff

For extraordinary research and outreach contributions having worldwide impact on genetic improvement programs, choice of breeds, and use of crossbreeding systems for beef production.

Donald P. Knowles

For innovative scientific leadership and research to solve serious problems in infectious animal diseases, creation of sustained partnerships, and training of future agricultural scientists.

Kenneth P. Vogel

For contributions to science, perennial grass breeding and genetics, and grassland and bioenergy production systems.

2013

Rufus L. Chaney

For internationally recognized research and applications of science leading to concepts, management, and regulatory actions reducing risks to human health and environmental quality.

Sarah Hake

For pioneering research and leadership in developmental biology leading to the discovery and elucidation of genes that regulate plant architecture and agricultural productivity.

David W. Ramming

For pioneering research and leadership in the development of superior table grape, raisin, and stone fruit cultivars responsible for U.S. industry growth and consumer satisfaction.

2014

Perry B. Cregan

For pioneering research in developing genetic tools, widely used to improve legumes and grains worldwide, that are helping feed a hungry world.

Jerry L. Hatfield

For leadership and creativity in building the scientific foundation for agricultural practices leading to improved efficiency and reduced environmental impact of agricultural systems.

Hyun S. Lillehoj

For a lifetime of distinctive agricultural research impact, mentoring, and transfer of technologies that have benefited small and large poultry producers worldwide and contributed to global food security.

Ross Welch

For being a world leader on pioneering work linking agricultural research to human nutrition and health with a focus on micronutrient malnutrition in developing countries.