



Office of International
Research Engagement
and Cooperation

**LEADERSHIP IN AGRICULTURAL DISCOVERIES
THROUGH SCIENTIFIC EXCELLENCE**



The USDA Agricultural Research Service (ARS) delivers solutions to national and global agricultural challenges through scientific excellence, innovation, and integrity. Through the Office of International Research Engagement and Cooperation (OIREC), ARS develops valuable strategic international partnerships that support and enhance U.S. agriculture. OIREC is part of the ARS Office of National Programs, four primary research areas that guide and empower the approximately 2,000 ARS scientists conducting research on 660 projects across the nation.

**OIREC IS PART OF
THE ARS OFFICE OF
NATIONAL PROGRAMS**



4 Primary
Research Areas

2,000 Scientists

660 Projects



**NATURAL RESOURCES & SUSTAINABLE
AGRICULTURAL SYSTEMS**

Developing technologies and strategies that help farmers, ranchers, and other managers effectively steward the diverse agricultural mosaic spread across the nation.



ANIMAL PRODUCTION & PROTECTION

Improving the health, well-being, and efficiency of livestock, poultry, and aquatic food animals to ensure a productive and safe food supply.



CROP PRODUCTION & PROTECTION

Delivering science-based information, genetic resources, and technologies for increased crop productivity, economically and environmentally sustainable methods of crop production, and crop protection from diseases and pests.



NUTRITION, FOOD SAFETY, & QUALITY

Maintaining a healthy and safe food supply while improving the economic viability and competitiveness of American agriculture by enhancing the quality and utilization of agricultural products for the benefit of producers and consumers.



CROSS CUTTING THEMES

Current challenges of climate change and weather variability challenge all aspects of agricultural production systems. ARS has a portfolio that includes diverse projects aimed at improving climate resilience and adaptation of our production systems, including the USDA Regional Climate Hubs, which translate scientific data into regionally useful information for customers and stakeholders.

CLIMATE CHANGE

ARS fosters research synergies that cut across the continuum of science to achieve breakthrough innovations. These synergistic projects harness the energy of diverse scientific teams to address complex problems of high national and global importance.

The LTAR network assesses the typical management practices and production systems within each agricultural production region of the United States and assesses opportunities for improving the system or its components that might enhance productivity and profitability while protecting natural resources and reducing negative environmental impact.

LONG-TERM AGROECOSYSTEM RESEARCH NETWORK (LTAR)

For many agriculturally relevant species, the current challenge is to predict an organism's phenotype based on its genotype and environment. Gene editing technologies, which allow the interrogation of existing and novel genetic variation, will facilitate the identification of causal genetic variation.

GENOMICS

ARS is constantly working to modernize our data management and infrastructure to ensure that data are consistent, high quality, accessible, and readily available for advanced analytics via Big Data tools such as Artificial Intelligence (AI), Machine Learning, and similar tools.

DATA MANAGEMENT AND INTEGRATION

The Office of Technology Transfer (OTT) encourages, promotes, and facilitates the adoption and commercialization of technology resulting from ARS research, helping to move USDA research discoveries to the marketplace and practical application.

TECHNOLOGY TRANSFER

Sophisticated sensors combined with computational analysis strategies, such as AI, have made it possible to automate landscape, plant, and animal data collection needed to develop decision support tools and information valuable to U.S. producers across all production systems.

PRECISION MANAGEMENT

ARS has overseas biological control laboratories (OBCLs) in Argentina, Australia, China, France, and Greece; countries that are the native homes of many plants and insects that are invasive in the United States. OBCL researchers identify and evaluate natural enemies of these invasive pests, with the goal of limiting or eliminating the invasive organisms and reducing their damage to U.S. agriculture, the environment, and public health.

BIOLOGICAL CONTROL



 ARSinternational@usda.gov

 301•504•4545

 ars.usda.gov/OIREC