

Partnerships and Opportunities in Agricultural Research

**1890 Land-Grant Universities
Association of Research Directors
16th Biennial Research Symposium
*April 11, 2011***

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Administrator

United States Department of Agriculture

Agricultural Research Service



Topics

- USDA Research, Education, and Economics Mission Area
- ARS Overview
- USDA Research Priorities and Future Directions
- ARS Collaborations with 1890 Institutions
- Student Intern and Career Opportunities



U. S. Department of Agriculture

Secretary of Agriculture

Under Secretary

Research, Education, and Economics (REE)

ARS
Agricultural Research
Service

NIFA
National Institute of
Food and Agriculture

ERS
Economic Research
Service

NASS
National Agricultural
Statistics Service



ARS Profile

(<http://www.ars.usda.gov>)

- Intramural scientific research agency of USDA
- Farm-to-table research scope
- Information and technology transfer
- Administration and stakeholder priority setting process
- National Research Programs
- International collaborations
- 1,000+ projects
- 2,500+ scientists and post docs
- 6,500+ other employees
- 100+ laboratories; 5 overseas laboratories
- \$1.1 billion annual budget
- Partnerships with other agencies, universities, and industry



ARS Locations



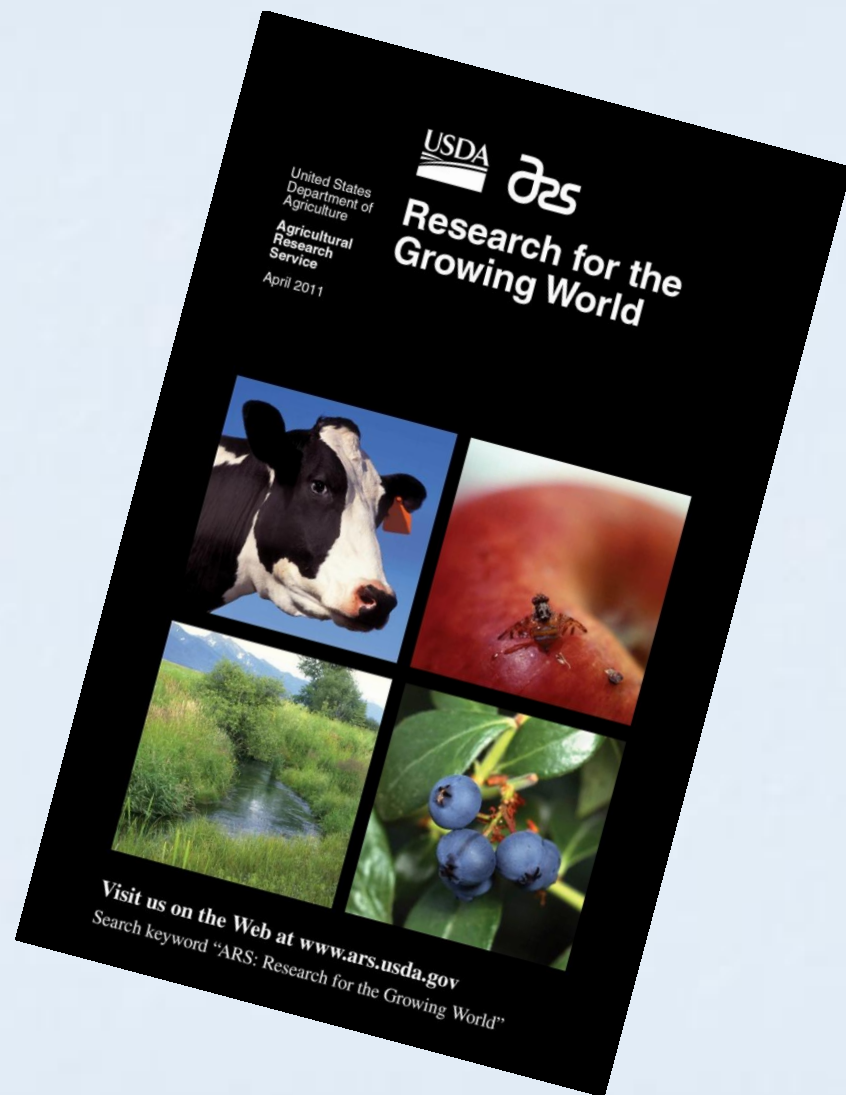
USDA and ARS Research Priorities and Targeted Outcomes

- Nutrition and Childhood Obesity
- Food Safety
- Climate Change Adaptation
- Natural Resources Conservation & Management
- Bioenergy/Biofuels
- Food Security



Priorities & Goals

USDA
Research, Education, and
Economics Mission Area
Action Plan 2012-2017



Download "Research for the Growing World" at
<http://www.ars.usda.gov/is/np/ARSResearchfortheGrowingWorld/ARSResearchfortheGrowingWorldIntro.htm>



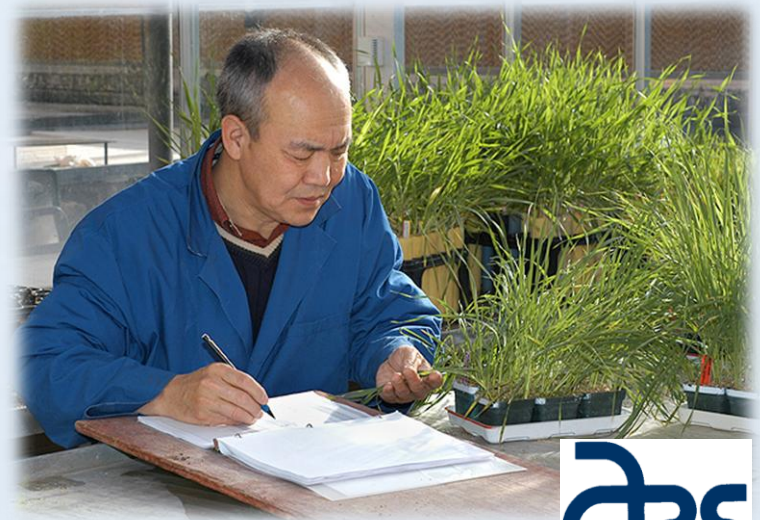
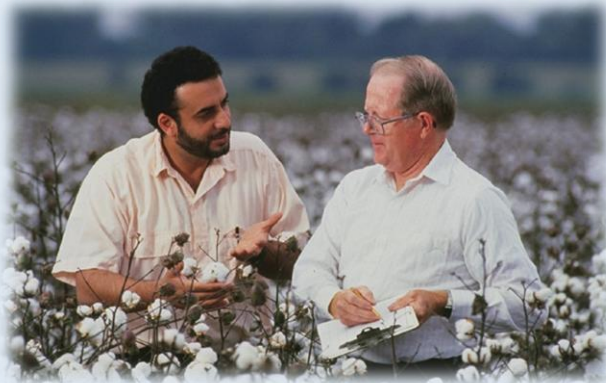
Natural Resources & Sustainable Agricultural Systems

- Water Availability & Watershed Management
- Climate Change, Soils and Emissions
- Pasture, Forage & Rangeland Systems
- Agricultural & Industrial Byproducts
- Agricultural Systems Competitiveness and Sustainability
- Bioenergy



Crop Production & Protection

- Plant, Genetic Resources, Genomics and Genetic Improvement
- Plant Biological & Molecular Processes
- Plant Diseases
- Crop Protection & Quarantine
- Crop Production
- Methyl Bromide Alternatives



Animal Production & Protection

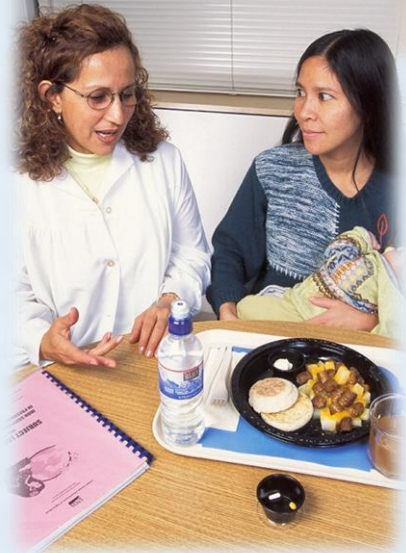
- Food Animal Production
- Animal Health
- Veterinary, Medical, and Urban Entomology
- Aquaculture



Nutrition, Food Safety & Quality



- Human Nutrition
- Food Safety
- Quality and Utilization of Agricultural Products



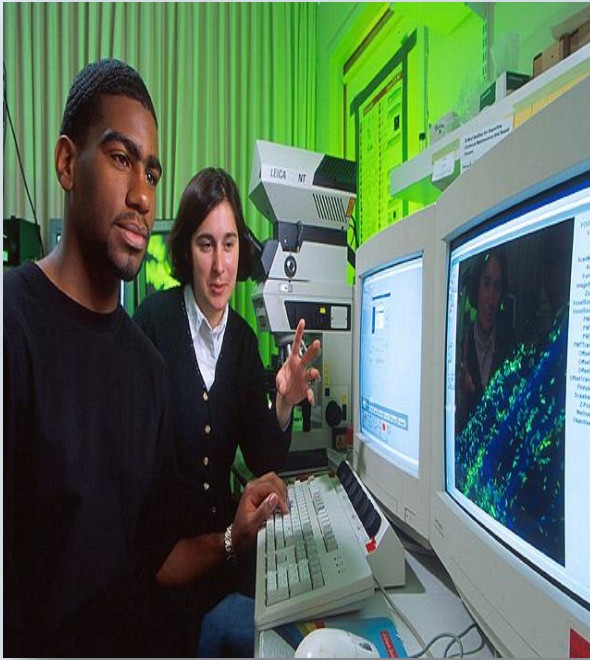
ARS Customers & Research Partners

- USDA Agencies
- Other Federal Agencies
- State Agencies
- Universities
- Producers (farmers, growers, ranchers)
- Commodity and Trade Organizations
- International Organizations
- Non-governmental Organizations (NGOs)
- Private Corporate and Entrepreneurial Sectors
- Consumers



ARS/1890s Collaborations

- Centers of Excellence -ARS Co-locations
- Cooperative Agreements
- Student and Career Opportunities



Delaware State University / ARS

- Microbial Safety of Aquaculture Products
 - Shellfish food safety
- Eastern Regional Research Center, PA
- ARS Scientists
 - *Dr. Gary Richards, Lead Scientist/Research Microbiologist*
 - *Dr. David Kingsley, Research Microbiologist*



Florida A&M University/ARS

- Center for Medical, Agricultural, and Veterinary Entomology, Gainesville, FL
 - Biological control of insect pests
- ARS Scientists
 - Dr. Stephen Hight, Entomologist
 - Dr. Jesusa C. Legaspi, Research Entomologist
 - Dr. Stuart R. Reitz, Co-Director



Tennessee State University/ARS

- U.S. National Arboretum, Washington, D.C.
 - Ornamental nursery crops research
- Southern Horticultural Laboratory, Poplarville, MS
- Application Technology Research Unit, Wooster, OH
- ARS Scientists
 - *Dr. Sandra Reed*
 - *Dr. Donna Fare*



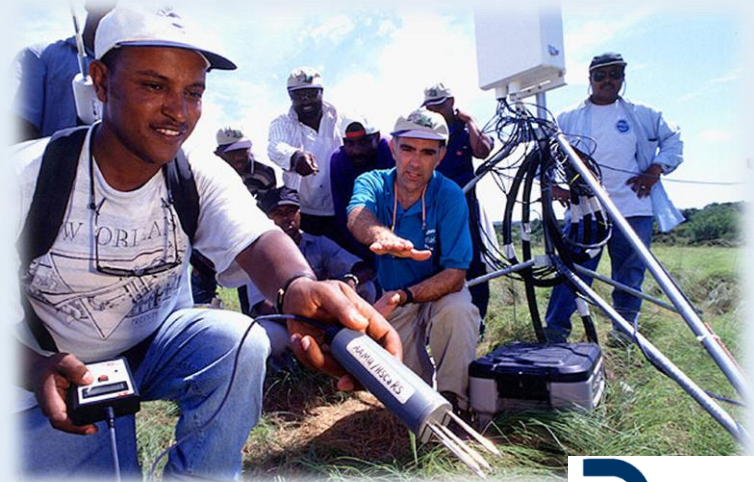
University of Maryland Eastern Shore/ARS

- Poultry Food Safety
- Eastern Regional Research Center, PA
 - Food Safety
- Pasture Systems and Watershed Management Research Unit, University Park, PA
 - Water Quality of Chesapeake Bay
- **ARS Scientists**
 - *Dr. Thomas Oscar*



Langston University/ARS

- Grazinglands Research Laboratory, El Reno, OK
 - Sustainable forage production for low-input farming systems
- ARS Scientists
 - *Dr. Paul Bartholomew, Research Agronomist*
 - *Dr. Robert Williams, Plant Physiologist*



Other 1890/ARS Partnerships

- Alabama A&M
- Alcorn State
- Fort Valley State
- Kentucky State
- Lincoln
- North Carolina A&T
- Prairie View
- South Carolina State
- Southern University
- Tuskegee Institute
- University of Arkansas-Pine Bluff
- Virginia State
- West Virginia State



USDA Internship Opportunities

- Undergraduate
- Graduate
- Multiple Programs
 - 150 ARS interns
- How to apply



The poster features the USDA logo and text: "U.S. Department of Agriculture", "ARS Agricultural Research Service", and "part of the REE Mission Area". Below this is the title "Career Opportunities" in a large, bold font. Three photographs show researchers in lab coats working with plants and equipment. A blue banner below the photos reads "Research for the Growing World!". The text lists career types: "Research Scientists", "Postdoctoral Research Associates", "Support Scientists", and "Administrative and Management". It also describes the benefits package and provides contact information: "www.ars.usda.gov/careers" and "e-mail: careers@ars.usda.gov". A small note at the bottom states "USDA/ARS is an equal opportunity employer."

USDA U.S. Department of Agriculture
ARS Agricultural Research Service
part of the REE Mission Area

Career Opportunities

Research for the Growing World!

Careers in ARS include the following:
Research Scientists
Postdoctoral Research Associates
Support Scientists
Administrative and Management

ARS offers a competitive benefits package, a family friendly environment, and the opportunity to work in an organization where research results touch the lives of every American and those around the world. Positions are available in our locations nationwide.

www.ars.usda.gov/careers
e-mail: careers@ars.usda.gov

USDA/ARS is an equal opportunity employer.

<http://www.afm.ars.usda.gov/ODEO/AreaContact.htm>



1890 Graduate Student Agricultural Research Symposium at Beltsville, MD

Diversity at USDA Everyday in Every Way!

BELTSVILLE AREA GRADUATE STUDENT AGRICULTURAL RESEARCH SYMPOSIUM

*100 Years of Agricultural Research
Advancing Agriculture through Research and Partnerships:
ARS and 1890 Land-Grant Universities*

FEBRUARY 10- 11, 2011

Henry A. Wallace
Beltsville Agricultural Research Center
10800 Baltimore Avenue
Beltsville, Maryland 20705
www.ars.usda.gov/ba



Diversity of Bacterial Species Isolated from Fish

Katrina Masil and Jung-Gun Lee
Department of Human Ecology, Food Science program, Delaware State University
Dover, DE 19901

Psychrotolerant bacteria on iced and refrigerated fishery products are well known to increase during storage time and temperature. Several spoilage and psychrotolerant bacteria (*Pseudomonas* spp. and *Shewanella* spp.) are known for major microbial growth and metabolism on seafood. This study illustrates the production of unacceptable off-flavors. Below illustrates a brief outline of the research project.

Introduction:
The quality and safety of seafood is the major concern of processors, quality control authorities, fishery markets and final consumers. The recent establishment of the specific spoilage organism (SSO) concept has contributed significantly to our understanding of seafood spoilage. It has been shown in many seafood products that the amount of SSOs can be used to predict the remaining product shelf life, thus making identification methods of these bacteria a top priority. In order to understand bacteria spoilage on a fish fillet, bacterial identification and characterization will be achieved through biochemical tests, rDNA sequencing, and protein synthesis and mass spectrometry respectively.

Research Plan:

- Bacteria isolation from cod fish fillet
- Bacterial enumeration & culture
- Bacterial isolation using string method & enrichment
- Single pure cultures
- Genomic PCR & rDNA identification
- Bacterial identification (16S rDNA & rDNA sequencing)
- Bacterial identification using MALDI-TOF MS

Expectations:
By determining specific bacterial species, this research will help companies and consumers make informed decisions to reduce and even prevent spoilage and degradation on fish.

References:



- Encouraging graduate students from 1890 Land Grant Universities to explore career opportunities at Beltsville Area and throughout ARS.
- ~250 students from seven 1890 Land-Grant Universities participated



ARS Employment Opportunities

- **Research Scientists**
- **Post-doc Research Associates**
- **Technical Support Personnel**
- **Administrative, Clerical, and Trades**

<http://www.afm.ars.usda.gov/hrd/jobs/index.htm>



Scientific Disciplines at ARS

- **Agricultural Engineering**
- **Animal Science**
- **Bioinformatics**
- **Chemistry**
- **Food Safety**
- **Hydrology**
- **Microbiology**
- **Pathology**
- **Physics**
- **Soil Science**
- **Virology**
- **Agronomy**
- **Biochemistry**
- **Biology**
- **Entomology**
- **Genetics**
- **Immunology**
- **Nutrition**
- **Physical Science**
- **Plant Science**
- **Veterinary Science**

<http://www.ars.usda.gov/Careers/>





Your Future Grows Here!

