



# Colorado State University

## COLLEGE OF AGRICULTURAL SCIENCES

### Committed to 21st Century Solutions for Food Systems and the Environment

#### Assuring Meat and Produce Safety and Quality



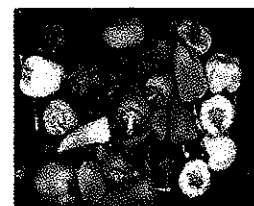
Food safety is a challenging concern that requires generation of new information and re-evaluation of existing knowledge to address threats or risks to human health. Important food safety concerns include illness from pathogenic microorganisms, chemical contaminants, naturally occurring toxicants, and food additives. Researchers at Colorado State conduct food safety research on issues related to meat, seafood, and fresh produce. Our programs are designed to

- Develop and evaluate techniques and biosensors for rapid detection of foodborne public health concerns
- Examine animal identification and traceability systems in livestock and meat products
- Enhance the nutritional value of meat
- Develop science-based strategies to ensure exports of high quality, nutritious, safe foods

#### Improving Food for Enhanced Human Health

The goal of the Crops for Health program is to reduce the burden of chronic diseases, i.e. obesity, diabetes, heart disease, and cancer, via food as the vehicle of choice for delivering health-promoting chemicals to the human population. The primary research approach is to understand disease-preventing properties of the plant metabolome and to maximize these properties through plant breeding and the marketing of healthier new crop cultivars. Our objectives are to

- Connect health-promoting traits of crops to traditional plant breeding programs
- Work with crop producer organizations to introduce improved crops into human diets
- Maintain strong expertise in specialty crops



#### Developing Profitable and Environmentally Sound Beef/Dairy Production Systems



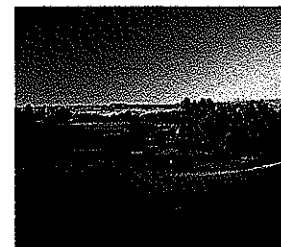
The goal of this initiative is to utilize our resources and strengths in the College of Agricultural Sciences and across the university to produce and optimize sustainable beef/dairy systems that will address the global challenges of hunger and health. The systems being developed will minimize environmental concerns associated with beef and dairy production, especially those arising from the cattle carbon footprint and the resulting impact on climate change. Our primary goals are to

- Increase the efficiency and economic viability of beef and dairy production
- Mitigate gas emissions such as ammonia and methane from livestock operations
- Improve animal welfare
- Enhance global markets for U.S. beef and dairy products

#### Developing Land Use Systems for Sustainable Agriculture and Urban Environments

Land use decisions will greatly impact 21st century agriculture's ability to address global challenges such as hunger, alternative energy development, climate change, and environmental economic sustainability. The College of Agricultural Sciences plays a central role in addressing land use in Colorado, the nation, and the world by combining sustainable design with economic tradeoffs. Our researchers are working to

- Increase economic viability in rural Colorado
- Enhance food security and environmental sustainability with second generation biofuels
- Ensure a balance between wildlife protection and agricultural interests, both of which contribute to Colorado's recreation economy



#### Innovative Approaches to Limited Water Resources



A critical aspect of water management in Colorado is coping with the competing demands for available water. Our primary approach is to address the closely linked global challenges of global hunger, health, and climate change issues with competition for water. Our objectives are to

- Develop profitable and environmentally sustainable cropping systems under water-limited conditions
- Develop water-efficient urban landscapes
- Apply GIS technology to enhance cropping systems and to aid land use decisions
- Develop water conservation practices for crop and animal production

## **CAS Administration**

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## **Strategic Area Contacts**

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## **CAS By the Numbers**

### **Students**

1,220 undergraduate students  
220 graduate students  
68% Colorado residents as undergraduate students

### **Faculty & Staff**

113 faculty members  
2 University Distinguished Professors  
1 University Distinguished Teaching Scholar  
108 administrative professionals  
24 state-classified personnel  
51 graduate assistants  
16 other salaried employees

### **Research**

Research Expenditures of \$13.2 million in FY10

### **Scholarships**

Scholarships totaling \$515,786 in FY10 awarded to 304 students

## **Majors & Concentrations**

### **Agricultural Education Program**

- Agricultural Education

### **Agricultural & Resource Economics**

- Agricultural Business
- Agricultural Economics
  - Agricultural Economics*
  - Farm & Ranch Management*
  - Natural Resource Economics*

### **Animal Sciences**

- Animal Science
  - Food Safety Interdisciplinary Study*
- Equine Science

### **Bioagricultural Sciences & Pest Management**

*Bioagricultural Sciences & Pest Management is a graduate program of study, but offers minor options to undergraduates.*

- Entomology Minor
- Plant Health Minor

### **Horticulture & Landscape Architecture**

- Horticulture
  - Business Management*
  - Floriculture*
  - Food Crops*
  - Horticultural Therapy*
  - Organic Ag Interdisciplinary Study*
  - Science*
  - Viticulture and Enology*
- Landscape Architecture
- Landscape Horticulture
  - Landscape Business*
  - Landscape Design & Contracting*
  - Nursery/Landscape Management*
  - Turf Management*

### **Soil & Crop Sciences**

- Soil & Crop Sciences
  - Agronomic Production Management*
  - Applied Information Technology*
  - Environmental Soil Sciences*
  - International Soil & Crop Sciences*
  - Organic Ag Interdisciplinary Study*
  - Plant Biotechnology/  
Genetics & Breeding*
  - Soil & Crop Sciences*
  - Soil Resources & Conservation*



**Colorado State University**