

Utah Agricultural Experiment Station Active Projects- 2009

Department of Animal, Dairy & Veterinary Sciences	
NAHLN Grant Agreement	Baldwin, Thomas J.
Veterinary Diagnostic Laboratory, Logan, UT	Baldwin, Thomas J. Hall, J.O. Skirpstunas, Ramona
Housing of University Animals	Bowman, Brett R.
Germ Cell and Embryo Development and Manipulation for the Improvement of Livestock	Bunch, Thomas White, Kenneth L.
Increased Efficiency of Sheep Production	Bunch, Thomas D. Cockett, Noelle E.
Using Genomics to Address Health and Disease Resistance in Livestock	Cockett, Noelle E. Hadfield, Tracy
Development of a High Resolution Physical Map for the Ovine Genome	Cockett, Noelle E.
The Addition of 60,000 SNPs to the Ovine Genome Map	Cockett, Noelle E.
Joint U.S. China Biotechnology Research and Extension, Utah	Cockett, Noelle E.
Characterization of the Ovine Genome	Cockett, Noelle E. Hadfield, T.S.
Identification of Genetic Markers Associated with Economically Important Traits in Livestock	Cockett, Noelle E.
National Animal Genome Research Program	Cockett, Noelle E. Bunch, Thomas D.
Genomics to Increase Aflatoxin Resistance in Turkeys	Coulombe, Roger A.
Reducing the Adverse Impacts of Agricultural Toxins	Coulombe, Roger A.
Beneficial and Adverse Effects of Natural, Bioactive Dietary Chemicals on Human Health and Food Safety	Coulombe, Roger A.
High Value Specialty Crop Pest Management	Deer, Howard M.
Manipulation of Ruminant Fermentation to Enhance Forage Utilization and Improve Ruminant Production	Eun, Jong-Su
Nutrition and Management of Feedlot Cattle to Optimize Performance, Carcass Value and Environmental Compatibility	Eun, Jong-Su
Metabolic Relationships in Supply of Nutrients for Lactating Cows	Eun, Jong-Su
Maintenance and Operation of Animal Science Farms and Facilities	Galloway, Parl ZoBell, Dale
Toxic Effects of Minerals, Plants, and Interactions of Plants with Minerals in Livestock	Hall, Jeffery O.
Pathogenic Mechanisms of West Nile Virus Neurological Disease	Morrey, John D.
Animal Model Evaluations of Candidate Hepatitis Therapies	Morrey, John D.
Metabolic Networks of Mammalian Fertilization	Rickords, Lee F.
Gene Reprogramming in Nuclear Transfer Derived Bovine Embryos	Rickords, Lee F.
Clinical Care of University Animals	Stott, Rusty
Surveillance Plan for Emerging and Exotic Infectious Disease: An Expanded Role for the Utah Veterinary Diagnostic Laboratory	Trujillo, Jessie
Caine Dairy Operation	Wallentine, John C.
In Vitro Embryo Production	White, Kenneth L.

Mycoplasma Bovine Mastitis and Descriptive and Statistical Analyses	Wilson, David J.
Mastitis Resistance to Enhance Dairy Food Safety	Wilson, David J.
Management Systems to Improve the Economic and Environmental Sustainability of Dairy	Young, Allen J.
Enterprises	
The Management of Calves and Heifers to Improve Dairy Farm Profitability and Productivity	Young, Allen J.
Animal, Economic, Environmental, Genetic, Human, Nutritional and Plant Aspects of Grass Fed Beef	ZoBell, Dale
Maximizing Forage Utilization in Beef Cattle Diets	ZoBell, Dale
USDA – Agricultural Research Service	
Plant Genetic Resource Conservation and Utilization	Jensen, Kevin
Plant Genetic Resource Management, Preservation, Characterization and Utilization	Jensen, Kevin
Develop, Evaluate and Exchange Promising Plant Germplasm for the Western U.S.	Johnson, Douglas A. Monaco, Thomas Peel, Michael Ryel, Ronald Jones, Thomas
USDA–Poisonous Plant Research Lab	Panter, Kip E. Stegelmeier, Bryan Lee, Stephen T. Gardner, Dale R.
Department of Agricultural Systems Technology & Education	
Selection and Optimization of Trailer Mounted Spray Equipment	Beard, F. Richard
Effect of Livestock Grazing on Soil Compaction and Nutrient Cycling	Miller, Rhonda L.
Waste Management for On-Farm Sustainability	Miller, Bruce E.
Whole Farm Dairy and Beef Systems for Environmental Quality	Miller, Rhonda L.
Nitrogen Cycling, Loading, and Use Efficiency in Forage-Based Livestock Production Systems	Miller, Rhonda L.
Agricultural Literacy	Warnick, Brian K.
Department of Watershed Sciences	
Quantify Utah Hydroclimate Using a High-Resolution Regional Climate Model	Jim, Jiming
Evaluating the Importance of Plant Genetic Diversity to Ecosystem Function in Wetland	Kettenring, Karin M.
Department of Biological & Irrigation Engineering	
Impact, Detection and Tracking of Nanoparticles in Agriculture: A Focus on Crops and Associated Soil Microbes	Britt, David W.
Development of Lactose-Surfactants and Polymers to Improve Water Utilization and to Reduce Soil Runoff in Agricultural & Municipal Set	Britt, David W.
Verification of Field Crop Evapotranspiration in an Irrigated Arid Environment	Hill, Robert W.
Improved Water Management through Calibration of the Float Method for Flow Measurement in Open Channels	Merkley, Gary P.
Agricultural Sprinkler Irrigation Design and Analysis Application	Merkley, Gary P.
Irrigation Water Demand Estimates in Agriculture and Urban Areas Using Remote Sensing	Neale, Christopher M.U.
Optimization for Sustainable Conjunctive Water Resources Planning and Monitoring	Peralta, Richard C.
Biological & Irrigation Engineering Laboratory & Farm Service	Sims, Ron

Department of Biology	
Properties of Novel Cell Signaling Proteins	Adams, Brett
Developing Sustainable and Organic Pest Management Programs for Western Orchard Systems	Alston, Diane G.
Monitoring and Management of Onion Thrips in Utah Dry Bulb Onions	Alston, Diane G.
Integrated Orchard Management Systems Research and Demonstration	Alston, Diane G. Black, Brent Evans, C. Kent
Insect Caneborers in Raspberry and Blackberry: Biology, Phenology, and Management	Alston, Diane G.
Community Behavior in <i>Pseudomonas chlororaphis</i> 06: It's in the Genes	Anderson, Anne J.
Developing the U.S. National Virtual Herbarium	Barkworth, Mary E.
Integrating Access to Information from Herbaria	Barkworth, Mary E.
Intermountain Herbarium	Barkworth, Mary E.
Grass Identification Resources for North America	Barkworth, Mary E.
The Effects of Genomic Duplications on Gene Function	Cliften, Paul F.
The Role of Phosphoinositide Signaling in Plant Growth and Stress Acclimation	DeWald, Daryll B.
Biology Department Operations	DeWald, Daryll B.
Biological Control in Pest Management Systems of Plants	Evans, Edward W.
Improving Our Understanding of Biological Antagonists of Fire Blight of Apples at the Kaysville Experiment Farm and Growers Orchards in Utah	Evans, C. Kent
Role of K ⁺ Channels in Nutrient Detection in Chemosensory Cells	Gilbertson, Timothy
Creating and Implementing Sampling Plans for Alfalfa Insects	Hodgson, Erin W.
Rust Fungi for Biocontrol of Weeds in Utah: Understanding Their Biology	Kropp, Bradley R.
Selective Degradation of Human Cancer Cells by Sheep Bluetongue Viruses that Exhibit Oncolytic Activities	Li, Joseph K.
Mechanisms and Consequences of Host-Range Expansion by a Seed Beetle	Messina, Frank J.
Coordination of Volume and Surface Area Changes in Guard Cells	Mott, Keith E.
Diversity of Nocturnal Velvet Ants in the North American Deserts	Pitts, James P.
Persistence of Cheatgrass on Western Rangelands: The Role of Cheatgrass-induced Changes in Soil Nutrient Cycling	Stark, John M.
Novel Lipopeptide-Based Agrofungicides: Properties, Action, and Development	Takemoto, Jon Y.
Using DNA Sequences to Untangle the Relationships of Aphids (Hemiptera: Aphididae) and Provide Molecular Signatures for Agricultural Pest Species	von Dohlen, Carol D.
Utah State University Insect Collection and its Maintenance	Hanson, Wilford J. Pitts, James P. von Dohlen, Carol D.
Center for Integrated BioSystems	
Biotechnology Center	
Functional Genomics in Nature	White, Kenneth L.
Department of Chemistry	
Biodiesel Production from Utah Safflower	Barney, Brett M.
Direct Production of Biofuels in Photosynthetic Microbes	Seefeldt, Lance C. Barney, Brett M.

College of Natural Resources	
McIntire-Stennis Research Administrative Support	Frazer, Nat
Department of Applied Economics	
Enhancing the Competitiveness and Value of U.S. Beef	Bailey, DeeVon
The Emergence of Supply Chains and Their Potential Impact on Utah's Food and Agricultural Products	Bailey, DeeVon
Associations of Non-Point Source Polluters and Water Quality Trading in the Bear River Basin	Caplan, Arthur J.
Applied Commodity Price Analysis, Forecasting, and Market Risk Management	Feuz, Dillon M.
Enhancing Profit for Intermountain Cattle Ranches: An Economic Analysis	Feuz, Dillon M.
WTO Accession and China's Agricultural Trade Liberalization	Gilbert, John P.
Incomplete Information, Contracts, and Decision Processes in Agriculture	Glover, Terry F.
Benefits and Costs of Natural Resources Policies Affecting Public and Private Lands	Jakus, Paul M.
Economics Research Institute	Jakus, Paul
State-Federal Income Taxes: Stability and Effect on Economic Growth and Farm Saving	Lewis, W. Cris Bowles, Tyler J.
A Dynamic Stochastic Analysis of Pesticide Resistance in a General Equilibrium Setting	Lyon, Kenneth S.
International Trade and Development	Oldai, Reza
Department of Environment & Society	
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International Trade and Development	Oldai, Reza
Department of Environment & Society	
Prescribed Fire in Riparian Zones Affected by Conifer Expansion: Ecological, Hydrologic, and Socio-Economic Effects	Brunson, Mark W. Marlow, C.B. Buschena, D.E. Weight, W.D.
Human Dimensions of Change in Rangeland and Forest Management	Brunson, Mark W.
Long-Term Implications of Drought for Ranching and Rangeland Management in Utah	Coppock, D. Layne
Research Advances in Agricultural Statistics	Durham, Susan
Recreation Ecology and Management in Wildland Ecosystems	Monz, Christopher
Vertebrate Pests of Agriculture, Forestry, and Public Lands	Schmidt, Robert H.

Communities in Transition: Bioregional Planning in the Intermountain West	Toth, Richard E.
Department of Family, Consumer & Human Development	
Use of In-Class Assessment and Targeted Parent-Teacher Communication to Enhance Day Care Children's School Readiness Scores	Austin, Ann M.B.
Exploring the Utilization and Outcomes of 502 Mutual Self Help Program by Low Income Families in Rural Utah	Delgadillo, Lucy
Relationship Quality and Stability in Rural Newlywed Remarriages	Higginbotham, Brian
Family Firms and Policy	Lee, Yoon G.
Mental Health Services for Women Diagnosed with Depression in Rural Utah Communities: The Feasibility and Effectiveness of a Technologically Assisted	Openshaw, D. Kim
Department of Wildland Resources	
Forecasting Changes in Rangeland Vegetation Under Future Climate and Grazing Management	Adler, Peter B.
Interaction of Emerging Threats and Bark Beetle Microbial Dynamics in Forest Ecosystems	Baker, Fred A.
Assessing the Impact of Forest Diseases	Baker, Fred A.
Finding Endemic Soil-Mediated Controls on Weed Growth	Beard, Karen H.
Using Cattle as Vegetation Manipulation Agents in Sagebrush Communities	Call, Chris
Testing the Olfactory Concealment Theory	Conover, Michael R.
The Ecology and Management of Disturbance in Intermountain Subalpine Spruce-Fir Forests	Jenkins, Michael J.
Social and Biological Aspects of Community Forests	Kuhns, Michael R.
Silviculture of Intermountain Subalpine Forests	Long, Jim N.
Primary Roles for Secondary Compounds: Enhancing the Health of Soil, Plants, Herbivores and People through Plant Biochemistry Diversity	Provenza, Fred D.
BEHAVE: Behavioral Education for Human, Animal, Vegetation & Ecosystem Management	Provenza, Fred D. Villalba, Juan
Application and Utility of the Ecological Site and Condition Concept for Monitoring Rangeland Ecological Status in the Western U.S.	Ramsey, R. Douglas
Development of New Approaches to Rangeland Monitoring and the Assessment of Condition and Trend	Ramsey, R. Douglas
GC/UV-B Program	Ryel, Ronald R.
Assessing the Coexistence of Woody and Herbaceous Plants in Sagebrush Steppe and Mountain Aspen Rangelands	Ryel, Ron
UV-B Monitoring and Research Program	Ryel, Ronald J.
Climate and Soil Impacts on Utah Pinon-Juniper Woodlands	Schupp, Eugene W.
Revegetation and Stabilization of Deteriorated and Altered Lands	Schupp, Eugene W.
Undergraduate Enrollment Trends in Natural Resources in the U.S.	Sharik, Terry L.
Nutrient Dynamics in Wildland Ecosystems	Van Miegroet, Helga
Self-Medication in Herbivores: A Low-Input and Sustainable Alternative to Improve Animal Health, Well Being, and Productivity	Villalba, Juan
Department of Nutrition, Food Sciences & Dietetics	
Anti-Listeria Action of Levulinate	Carpenter, Charles E.
Anti-Listeria Action of Organic Acids	Carpenter, Charles E.
Inhibition of Myoglobin and Lipid Oxidation in Modified Atmosphere Packaged Ground Beef	Cornforth, Daren P.

Improvement of Thermal and Alternative Processes for Foods	Cornforth, Daren P.
Renewable Energy and Other Useful Products from Waste Organics	Hansen, Conly L.
Methods to Add Value to Agricultural By-products	Hansen, Conly L.
Molecular Mechanisms of Iron Absorption and Transport	Hintze, Korry J.
The Role of Diabetes and Diet in Cognitive Decline and Alzheimer's Disease in the Cache County Study on Memory, Health, and Aging	Munger, Ronald G. Wengreen, Heidi Corcoran, C.
Regulation of Calcium and Phosphate Transport Across Intestine	Nemere, Ilka
Characterization of Extrusion-Textured Whey Products Containing Dietary Fiber	Walsh, Marie K.
An Integrated Approach to Prevention of Obesity in High Risk Families	Wengreen, Heidi J.
Diet, Cognitive Function, and Risk of Alzheimer's Disease Among Participants of the Cache County Study on Memory, Health and Aging	Wengreen, Heidi J.
Characterizing Stress Responses of Industrial Strains of Bifidobacteria and Their Use For Extending the Survival of Bifidobacteria in Foods	Broadbent, Jeffery R. Steele, J.L.
Genome Biology of Dairy Lactic Acid Bacteria	Broadbent, Jeffery R.
Identifying Genes Involved in Cheese Flavor Development	Broadbent, Jeffery R.
Effect of Emulsion Formulation on Its Physicochemical and Sensory Attributes	Martini, Silvana
Strategies for Making Value-Added Cheese	McMahon, Donald J.
Effect of Milk Fat Globular Membrane on Gut Mucosa and Lipid Metabolism	Ward, Robert E.
Modifying Milk Fat Composition for Improved Nutritional and Market Value	Ward, Robert E.
Functional Characterization of the Native Structure of Milk Fat	Ward, Robert E.
Department of Plants, Soils & Climate	
Utah State Botanical Garden Service Project	Anderson, David A.
Small Fruit and Viticulture Research	Black, Brent L.
Improving Economic and Environmental Sustainability in Tree Fruit Production Through Changes in Rootstock Use	Black, Brent L.
Multidisciplinary Evaluation of Tree Fruit Cultivars	Black, Brent L. Lindstrom, Thor
Expanding Opportunities for Fruit Production in Utah	Black, Brent L.
Benchmark Soilscapes to Predict Effects of Climatic Change in the Western USA	Boettinger, Janis L.
Quantitative Soil Survey and Interpretation	Boettinger, Janis L.
Controlled Environment Technology and Use	Bugbee, Bruce G.
Ethylene Synthesis and Sensitivity in Crop Plants	Bugbee, Bruce G.
Interfacing Technological, Economic and Institutional Principles for Managing Inter-Sector Mobilization of Water	Cardon, Grant E.
Water Policy and Management Challenges in the West (from W1190)	Cardon, Grant E.
Non-Traditional Soil Amendment Utilization and Performance Testing	Cardon, Grant E.
USU Analytical Laboratories	Cardon, Grant E. Hole, Pam
Genetic and Epigenetic Regulation of Apomixis: Pursuing the Headwaters	Carman, John G.
Mapping and Management of Invasive Weeds in Utah	Dewey, Steven A.
Biology and Management of Iris Yellow Spot Virus (IYSV) and Thrips in Onions	Drost, Dan T.

Vegetable Cropping Opportunities: Cover Crops and Production Strategies for Conventional and Organic Summer and Winter Vegetables in Utah	Drost, Dan T.
The Quantification of Seasonal Signatures of NDVI--Towards the Monitoring of Outbreaks in Vector-Bourne Disease	Gillies, Robert R.
Managing and Utilizing Precipitation Observations from Volunteer Networks	Gillies, Robert R. Malek, Esmail
The National Atmospheric Deposition Program	Gillies, Robert R. Malek, Esmail
Climate Data and Analyses for Applications in Agriculture and Natural Resources	Gillies, Robert R. Malek, Esmail M.
Climate Research and Services for the State of Utah	Gillies, Robert R.
Dynamics of Rhizosphere Chemistry: Influence on Sustainable Agriculture	Grossl, Paul R.
Interactions Between Evaporation Fluxes and CO2 Exchanges in Agricultural and Rangeland Ecosystems	Hipps, Larry E.
Improvement of Winter Wheat Through Breeding	Hole, David J.
Breeding and Testing Improved Varieties of Barley, Spring Wheat, and Oats	Hole, David J.
Plant Breeding	Hole, David J.
Systems to Improve End-Use Quality of Wheat	Hole, David J.
The Effects of Elevated Pco2 and Temperature on Trace Element Retention and Transports in Soils	Jacobson, Astrid
Drought Management Project, Utah	Johnson, Paul G.
Evaluation, Development, and Management of Native and Adapted Grass Species for Turfgrass Applications in the Intermountain West	Johnson, Paul G.
Turfgrass Research	Johnson, Paul G. Kopp, Kelly
Characterizing Mass and Energy Transport at Different Scales	Jones, Scott B.
Investigating landscape Water Consumption and Minimum Tree Water Requirements to Improve Irrigation Scheduling for Urban Landscape Water Conservation	Kjelgren, Roger
Production, Transition Handling, and Reestablishment of Perennial Nursery Stock	Kjelgren, Roger
Turfgrass Management in the Intermountain West: Conservation of Water and Nutrients	Kopp, Kelly L.
Intermountain Regional Evaluation and Introduction of Native Plants	Kratsch, Heidi A.
Propagation, Production, and Landscape Use of Native Plants for Water-Sustainability in the Intermountain West	Kratsch, Heidi A.
Management and Ecology of Irrigated Pastures in the Intermountain West	MacAdam, Jennifer W.
Intensive Pasture Management for Sustainable Livestock Production in the Western US	MacAdam, Jennifer W.
Ecophysiological Aspects of Forage Management	MacAdam, Jennifer W.
Evaluation of Radiation and Energy Balance Components, Cloud Parameterization, and Study of Clouds' Effects on the Cache Valley Microclimate	Malek, Esmail
Functional Genomics and Ecology of Nitrifying Bacteria	Norton, Jeanette M.
Managing Invasive Weeds in Wheat	Ransom, Corey V.
Integrated Weed Management in Agronomic Crops of Utah and the Intermountain West	Ransom, Corey V.
Sustainable Cropping Systems Utilizing Low-Cost Precision Agriculture and Remote Sensing	Rasmussen, V. Philip

Techniques	
Organic Stone-Fruit Production: Optimizing Water Use, Fertility, Pest Management, Fruit Quality and Economics	Reeve, Jennifer Black, Brent Alston, Diane Ransom, Corey
Diversification of Sustainable Farming Systems in Utah	Reeve, Jennifer
Plant Science Department Operations	Roper, Teryl
Understanding the Role of SIF in Regulating Flowering Time and Stress Response in Arabidopsis	Wu, Yajun
Crop Improvement Through Seed Certification	Young, Stanford A.
Production of Foundation Seed Stocks	Young, Stanford A.
Sustainable Agriculture Research & Education	
Western Region Sustainable Agriculture Research & Education (SARE) Training Professional Development Program	Rasmussen, V. Philip
Western Region Sustainable Agriculture Research and Education (SARE) Program	Rasmussen, V. Philip
Implementation of Western Region Sustainable Agriculture Research and Education (SARE) Proposal	Rasmussen, V. Philip
Department of Sociology & Social Work	
Western Rural Development	Albrecht, Don
Reduction of Error in Rural and Agricultural Survey	Allen, John
Social Network Structures and Rural Community Response to Change	Allen, John C.
Population Dynamics and Change: Aging, Ethnicity and Land Use Change in Rural Communities	Berry, Eddy
Impacts of Population Growth and Rural Residential Development on Agriculture in the Intermountain West	Jackson-Smith, Douglas
Social Change and Well-Being in Amenity-Growth Rural Communities: The Role of Seasonal and Episodic Residents	Krannich, Richard S.
Rural Sociology (Administrative Project)	Krannich, Richard S.
Bringing Latino Immigrants into the Financial Fold	Mannon, Susan E.
Gateway Communities and Neighboring Public Lands: Examining the Relationship	Petrzelka, Peggy
The Distribution and Determinants of Obesity: National, Regional and State-Level Analyses	Reither, Eric N.
Population Dynamics, Social Change and Health Outcomes: Spatial, Temporal, and Life Cycle Variations	Toney, Michael B.
Utah Agricultural Experiment Station	
Federal Grant Fund Research, General Administration	
Research and Education Outreach at the Utah Botanical Center	Anderson, David A.
Agricultural Experiment Station Farm Operations	Cartee, Raymond
Joint U.S. China Biotechnology Research and Extension, UT	Cockett, Noelle E.
High Performance Computing Utah	Hauser, Thomas
Drought Management, UT	Johnson, Paul G. Boettinger, Janis L. Cardon, Grant Jones, Scott B.
Public Lands and Rural Economics	Simmons, Randy T.
Rural Quality of Life Index	Simmons, Randy T.

Public Lands and Rural Economics	Simmons, Randy
Research Planning Using the Current Research Information System (CRIS)	Smith, Beth H.
Pasture and Forage Research, UT	Snyder, Donald L.
Economic, Environmental, Genetic, and Nutritional Aspects of Grass-Fed Beef	Snyder, Donald L.
Reproductive Performance in Domestic Ruminants	Stevens, John R.
Radiation Safety Committee (U-109)	Terrell, Stephen G.