

**Agricultural Research Center
College of Agricultural, Human, and Natural Resource Sciences
Washington State University**

**Projects Approved by USDA/CSREES for FY 2004-2005
By Department and Research Center**

DEPARTMENTS:

Agricultural Research Center

0262 Sorting of Proteins to Vacuoles in Plant Cells, Rogers, J.C.

0379 Aquaculture, Washington, Ristow, S.S.

0394 Grass Seed Cropping Systems for a Sustainable Agriculture, Cavalieri, R.P.

0424 Strategies for Ecological Pest Management in Cranberries, Patten, K.D., Bristow, P.R., Tanigoshi, L.K., Hebert, V.

0433 Aquaculture, Idaho Washington, Ristow, S.S.

0434 Grass Seed Cropping Systems for a Sustainable Agriculture, Cavalieri, R.P.

0436 Jointed Goatgrass: A Threat to U.S. Wheat Production, Ristow, S.S.

0556 Jointed Goatgrass: A Threat to U.S. Wheat Production, Ristow, S.S.

0557 Aquaculture, Idaho Washington, Ristow, S.S.

0558 Grass Seed Cropping Systems for a Sustainable Agriculture, Cavalieri, R.P.

0586 Developing Integrated Pest Controls for the Oyster Industry to Replace Carbaryl for Burrowing Shrimp Control, Patten, K.D.

0587 Jointed Goatgrass: A Threat to U.S. Wheat Production, Ristow, S.S.

0592 Aquaculture, Idaho and Washington, Ristow, S.S.

0600 Grass Seed Cropping Systems for a Sustainable Agriculture, Cavalieri, R.P.

2102 The Structural Basis for Receptor-Mediated Sorting to Vacuoles, Rogers, J.C.

7996 Multistate Research Coordination, Western Region, W-106, Cavalieri, R.P., Ristow, S.S.

9916 Administration of Agricultural Research-- Washington State, Cavalieri, R.P., Ristow, S.S.

Animal Sciences

0154 Environmental and Economic Impacts of Nutrient Management in Dairy Forage Systems, NE-132, Harrison, J.H.

0167 Enhancement of Dietary Energy Use for Maintenance, Growth, and Lactation by Beef Cattle, Johnson, K.A.

0181 Genetic Variation in Growth, Carcass Composition, Quality and Fatty Acid Composition of Wagyu Angus and Wagyu-Angus Cross Cattle, Gaskins, C.T., Busboom, J.R., O'Fallon, J.L.*

0304 Altering Ruminal Fermentation with Plant Extract, Nelson, M.L.

0374 Nutrient Management: Feeding for Reduced Excretion of Nutrients by Ruminants, Kincaid, R.L.

0380 Detection of the Polymeric Immunoglobulin Receptor, PIGR, in Porcine Oviductal Epithelial Cells, Leid, R.W.

- 0389 Genetic Aspects of Innate Immunity in Rainbow Trout, Ristow, S.S
- 0432 Pre-and Post-Harvest Manipulation of Palatability, Appearance and Lipid Composition of Red Meat, Busboom, J.R.
- 0446 A Candidate Gene Approach for Mapping of Quantitative Trait Loci for Marbling in Wagyu X Limousin Crosses, Jiang, Z.
- 0536 Development of *ex situ* Bovine Spermatogenesis, McLean, D.J.
- 0538 Development of *ex situ* Bovine Spermatogenesis, McLean, D.J.
- 0567 Endocrine Control of Rainbow Trout Skeletal Muscle Growth and Development, Rodgers, B.D.
- 0568 National Animal Genome Research Program, NRSP-8, Jiang, Z.
- 0569 Nutrient Management of Dairy Systems, Harrison, J.H.
- 0706 Germ Cell and Embryo Development and Manipulation for the Improvement of Livestock, W-1171, Wright, R.W.
- 0709 Mastitis Resistance to Enhance Dairy Food Safety, NE-1009, Fox, L.K., Davis, W.C.*
- 0764 Enhancing the Global Competitiveness of U.S. Red Meat, W-1177, Busboom, J.R.
- 0862 Metabolic Relationships in Supply of Nutrients for Lactating Cows, NC-1009, McNamara, J.P.
- 0913 Molecular Mechanisms Regulating Skeletal Muscle Growth and Differentiation, NC-1131, Dodson, M.V.
- 0957 Reproductive Performance in Domestic Ruminants, W-112, Reeves, J.J.
- 4956 Sterilization Vaccine for Cattle, Reeves, J.J.
- 8167 Emission Measurements of Ammonia, Methane, Nitrous Oxide and Particulates from Beef Production. Johnson, K.A., Westberg, H.H., Lamb, B.K., Kincaid, R.L., Harrison, J.H., Mount, G.H.
- Apparel, Merchandising, Design, and Textiles**
- 0399 Community Economic Development by Merchandising, Producing, and Distributing Textiles and Sewn Products, W-194, Salusso, C.J.
- Biological Systems Engineering**
- 0319 Modeling Hydrology and Erosion Processes at Watershed Scales: Modifying WEPP, Wu, J.Q.
- 0371 Studies of Using Microwave and Radio Frequency Energy in Food Safety, Phytosanitary and Quarantine Applications, Tang, J., Cavalieri, R.P., Pitts, M.J., Rasco, B.A., Clark, S., Kang, D.H., Li, B.*
- 0450 The Science and Engineering for a Biobased Industry and Economy, S-1007, Chen, S.
- 0467 Improvement of Thermal and Alternative Processes for Food, NC-136, Barbosa-Canovas, G.V., Powers, J.R., Cavalieri, R.P., Swanson, B.G., Tang, J., Clary, C.
- 0553 Development and Application of Water and Nutrient Models for the Analysis of Agricultural Systems, Stockle, C.O.
- 0554 Enhanced Anaerobic Digestion of Animal Manure with Nutrient Recovery, Chen, S.
- 0562 Research and Development for Biomass Processing and Bioproduct Production, Chen, S.
- 0573 Physical Properties of Food Powders, Barbosa-Canovas, G.V.
- 0990 Assuring Fruit and Vegetable Product Quality and Safety through the Handling and Marketing Chain, NE-1008, Tang, J., Fellman, J.K.
- 3227 Non-Chemical Pest Control in Fruits and Nuts Using Electromagnetic Energy, Tang, J., Hansen, J.D.*, Mitcham, E., Shellie, K.*

3352 Improving Water Quality for Salmon Restoration through Integrated Research Education and Extension Efforts, Chen, S., Leib, B.G.

4378 Microstructures and Properties of High/Low Acyl Mixed Gellan Gels, Tang, J.

4674 Planning Workshop-Emerging Food Processing Technologies: From Lab Bench to the Table, Barbosa-Canovas, G.V.

5378 Radio Frequency Energy as an Alternative to Methyl Bromide Fumigation for Controlling Pests in Stone Fruits and Nuts, Tang, J., Wang, S., Mitcham, E.J., Armstrong, J.W., Johnson, J.A.

6373 Improved Quarantine Treatments for Tropical Fruit Using Thermal Energy, Tang, J., Wang, S., Mitcham, E., Armstrong, J.

7319 Modeling Hydrology and Erosion under Winter Climatic Conditions of the Pacific Northwest: Modifying WEPP, Wu, J.Q.

Center for Precision Agricultural Systems

0529 Estimates of Fruit Maturity, Crop Load and Yield by Reflectance Measurements, Perry, E.

0551 Advancing Precision Agricultural Systems Through Automation, Sensing, Control, and Information Systems, Pierce, F.J., Perry, E., Brunner, J.F., Clary, C., Davenport, J.R., Fraise, C., Grove, G.G., Jones, V.P., Stevens, R.G., Pitts, M.J., Tarara, J.M.*, Whiting, M.

Center for Sustaining Agriculture and Natural Resources

0414 A Proposed Study to Determine Agricultural Drainage Practices Which Minimize Detrimental Effects on Salmonids, Feise, C.

0588 Organic Cropping Research for the Northwest, Granatstein, D.M., Miles, C.A., Feise, C.

0619 Organic Cropping Research for the Northwest, Granatstein, D.M., Miles, C.A.

6194 Organic Cropping Research and Education for the Northwest, Granatstein, D.M., Miles, C.A.

Community and Rural Sociology

0127 Local Dimensions of the Globalization of Food and Agricultural Marketing Systems, Jussaume, R.A.

0230 Sustaining Local Food Systems in a Globalizing Environment: Forces, Responses, Impacts, NE-1012, Ostrom, M., Jussaume, R.A.

0403 Systems Analyses of the Relationships of Agriculture and Food Systems to Community Health, NC-1001, Jussaume, R.A.

0445 Population Change in Rural Communities, W-1001, Kirschner, A.R.

0576 Socioeconomic and Environmental Impacts of Agricultural Research and Extension, Zuiches, J.J.

0585 Socio-Economic and Environmental Benefits of Agricultural Research and Extension, Zuiches, J.J.

0601 Public Agri-Food Research Organizations in a Globalizing Context, Glenna, L.L.

0942 How Visual Design and Layout Influences Answers to Self-Administered Paper and Internet Questionnaires, Dillman, D.A.

0981 Changing Social Dynamics in Washington's Rural Areas, Kirschner, A.R.

4179 Understanding, Evaluating, and Improving Direct Marketing Systems for Small Farms, Ostrom, M., Holland, D.W., Foltz, J.C., Lev, L.C., DePhelps, C.R., Zenz, L.K.

Crop and Soil Sciences

0152 Characterizing Mass and Energy Transport at Different Scales, W-1188, Flury, M., Wu, J. Q.

0175 Adaptation Studies of Cereal Varieties and Selections, Burns, J.W.

- 0182 Total Soil Carbon and Carbon Fractions Under Different Cropping and Tillage Practices in the Pacific Northwest, Bezdicek, D.F., Albrecht, S., Huggins, D.*
- 0196 Molecular Markers for Barley Disease Resistance Genes in Barley, Kleinhofs, A., von Wettstein, D.H., Steffenson, B.
- 0232 Breeding and Genetics of Winter Wheat, Jones, S.S., Murray, T.D., Baik, B.K., Chen, X.M.*, Morris, C.F.*, Campbell, K.G.*
- 0250 Cropping Systems Research for Low-Precipitation Dryland in Eastern Washington, Schillinger, W.F., Young, D.L., Kennedy, A.C.*, Paulitz, T.*, Sharratt, B.S.*, Wuest, S.B.*, Williams, J.D.*, Wysocki, D.J.*
- 0251 Breeding of Value-Added Barley by Incorporation of Protein-Engineered Beta-Glucanases, von Wettstein, D.H., Ullrich, S.E.
- 0256 Soil Conditions, Crop Productivity and Groundwater Quality in Some Western Washington Soils, Kuo, S., Peryea, F.J., Miltner, E.D.
- 0257 Developing Soil and Plant Nutrient Management Strategies to Address Variability in Perennial Crop Systems, Davenport, J.R., Stevens, R.G.
- 0267 Colloid Mobilization and Transport through the Vadose Zone, Flury, M.
- 0277 Biochemical Basis of Wheat and Wild Oat Seed Quality, Fuerst, E.P., Gallagher, R.S., Morris, C.F.*
- 0281 Alternate Crops for Irrigated Central Washington, Hang, A.N., Fransen, S.C., Kenny, S.T.
- 0297 Management of Riparian Weeds in Western Washington, Miller, T.W.
- 0308 Turfgrass Fertilizer and Pesticide Impacts on Surface Water Quality, Miltner, E.D., Stahnke, G.K., Cogger, C.G., Kuo, S., Johnston, W.J.
- 0323 Remote Sensing for Land Management, Frazier, B.E., Busacca, A.J., Pan, W.L., Carter, B.P.
- 0332 Evaluation and Management of Turfgrass Species and Cultivars, Johnston, W.J., Stahnke, G.K., Miltner, E.D., Johnson, R.C.*, Pan, W.L., Bragg, D.R.
- 0334 Improving Spring Wheat Varieties for the Pacific Northwest, Kidwell, K.K., Carter, B.P., Burns, J.W., Chen, X.M.*, Paulitz, T.*, Morris, C.F.*, Campbell, K.G.*, Steber, C.*, Dubrovsky, J., Bosque-Perez, N.
- 0350 Weed Control Research in Irrigated Vegetable and Specialty Crops, Boydston, R.A.*, Parker, R.
- 0353 Soil Quality Changes with No-Till Management Adoption for Wind Erosion Control, Kennedy, A.C.*
- 0359 Improving Wheat Quality in the State of Washington, Baik, B.K.
- 0363 Nutrient Management for Improved Crop Yield and Quality for Dryland Cropping Systems of Eastern WA, Koenig, R.T.
- 0373 Carbon and Nitrogen Cycling and Management in Alternative Cropping Systems, Pan, W.L., Frazier, B.E., Kidwell, K.K., Stevens, R.G., Young, F.L.*, Johnston, W.J., McGuire, A., McKean, W., Yenish, J.P., Koenig, R.T., Stannard, M. E.
- 0376 Integrated Management of Winter Annual Grass Weeds in Eastern Washington Dryland Crop Systems, Yenish, J.P.
- 0382 PM-10 Particulate Emission Prediction and Control from Agricultural Lands in the Pacific Northwest, Schillinger, W.F.
- 0384 STEEP: Solutions to Environmental and Economic Problems, Bezdicek, D.F.
- 0385 Sorption and Transport of CS in Soils, Harsh, J.B., Flury, M.
- 0397 Risk Assessment of Increased Soilborne Disease Pressure in Glyphosate Tolerant Wheat Production, Kidwell, K.K.

- 0398 An Integrated Physical and Expression Map for Barley for Triticeae Improvement, Kleinhofs, A.
- 0406 Characterizing Weed Population Variability for Improve Weed Management Decision Support Systems to Reduced Herbicide Use, NC-202, Parker, R.
- 0410 A Comparative Analysis of the Sustainability of Farming Systems, Reganold, J.P., Andrews, P.K., Hinman, H.R.
- 0413 International Cooperation for Agriculture Research in Central Asia and the Caucasus, Lumpkin, T.A.
- 0421 PM10 Particulate Emission Prediction and Control from Agricultural Lands in the Pacific Northwest Columbia Plateau, Schillinger, W.F.
- 0422 Ecologically-Based Management of Annual Weeds in Dryland Grain Production Systems of Eastern Washington, Gallagher, R.S.
- 0435 STEEP: Solutions to Environmental and Economic Problems, Bezdicek, D.F.
- 0449 Molecular Characterization and Manipulation of the Wheat Genome for Crop Improvement, Gill, K.S., Chen, X.M.*, Kleinhofs, A., Jones, S.S., Campbell, K.G.*, Steber, C.*
- 0520 Developing Tissue Nutrient Standards for Irrigated Wine Grapes in Central Washington, Davenport, J.R.
- 0546 International Cooperation for Agriculture Research in Central Asia and the Caucasus, Pan, W.L., Campbell, K.G.*
- 0552 PM-10 Particulate Emission Prediction and Control from Ag Land in the PNW, Schillinger, W.F.
- 0559 STEEP: Water Quality in the Pacific Northwest, Bezdicek, D.F.
- 0577 International Cooperation for Agriculture Research in Central Asia and the Caucasus, Pan, W.L., Campbell, K.G.*
- 0578 PM-10 Particulate Emission Prediction and Control from Ag Lands in the PNW, Schillinger, W.F.
- 0579 The Strategic Use of Nitrogen Source, Placement and Timing to Optimize Dryland Wheat Production in Use Efficiency and End-Use Quality, Koenig, R. T.
- 0581 The Chemical and Physical Nature of Particulate Matter Affecting Air, Water, and Soil Quality, NC-1022, Harsh, J.B.
- 0583 Breeding and Genetics of Hop, Kenny, S.T., Eastwell, K.C., Grove, G.G., James, D.G.
- 0584 Integrated Management of Winter Annual Grass Weeds in Eastern Washington Dryland Crop Systems, Yenish, J.P., Huggins, D.*, Burns, J.W., Young, F.L.*
- 0591 STEEP: Water Quality in the Pacific Northwest, Koenig, R.T.
- 0598 Eolian Soils, Global Change, and Washington Agriculture, Busacca, A.J., Frazier, B.E., Gaylord, D.L.
- 0617 International Cooperation for Agricultural Research in Central Asia and the Caucasus, Pan, W.L., Campbell, K. G.*
- 0618 PM10 Particulate Emission Prediction and Control from Agricultural Lands in the Pacific Northwest, Schillinger, W.F.
- 0689 Forage Quality and Management of Alfalfa and Grass in the Columbia Basin, Fransen, S.C., Woodward, T.*
- 0690 Chemistry, Bioavailability, and Toxicity of Constituents in Residuals and Residual-Treated Soils, W-1170, Kuo, S., Harsh, J.B., Miltner, E.D.
- 0715 Integrated Weed Management in Dryland Cropping Systems in Washington, Young, F.L.*
- 0722 Organic Amendments and Cover Crops in Sustainable Agricultural Systems, Cogger, C.G., Bary, A.I., Miller, T.W., Granatstein, D.M., Muehleisen, D.P.*

- 0747 Soil and Mineral Element Problems in Washington Tree Fruit Orchards, Peryea, F.J.
- 0805 Weed Research in Irrigated Agronomic, Horticultural, and Specialty Crops in WA, Parker, R.
- 0900 Soil Survey and Classification, Busacca, A.J., Frazier, B.E., Gessler, P.
- 1006 Breeding and Genetics of Barley, Ullrich, S.E., Kleinhofs, A., von Wettstein, D.H., Burns, J.W., Baik, B.K., Chen, X.M.*, Paulitz, T.*, Kidwell, K.K.
- 1134 Plant Genetic Resource Conservation and Utilization, W-006, Jones, S.S., Hannan, R.M.*, Johnson, R.C.*, Clement, S.L.*, Dugan, F.M. *, Welsh, M.*, Cavalieri, R.P., Bradley, V.*, Coyne, C.J.*, Greene, S.L.*, Hellier, B.*
- 1790 Breeding Dry Pea, Lentil and Chickpea Germplasm for Stress Tolerance, Disease Resistance and Quality, Muehlbauer, F.J.*, McPhee, K.E.*, Chen, W.*
- 1851 Enhancing Winter Wheat for Coldhardiness; Studies to Increase Winter Hardiness, Skinner, D.*, Allan, R.E.*
- 3151 Production of Recombinant Procollagen in Transgenic Barley Grain, von Wettstein, D.H.
- 3373 Low Temperature, Low Pressure Straw Pulping For Production of Linerboard, Corrugator Medium, Newsprint and Fertilizer, Pan, W.L.
- 3422 Various Strategies to Achieve Ecological and Economic Goals in the Transition Phase of Eastern Washington Organic Dryland Grain Production, Gallagher, R.S., Bezdicsek, D.F., Hinman, H.R.
- 4449 Molecular Characterization of a Major Gene-Rich Region of Wheat, Gill, K.S.
- 5422 Environmental Regulation of Seed Phenolics and Their Implication for Seed Band Persistence and Plant Fitness in *Avena fatua*, Gallagher, R.S., Kennedy, A.C.*, Fuerst, E.P., Alldredge, J.R.
- 6297 Functional Analysis of the Barley Stem Rust Resistance Genes RPG1, RPG4, and RPGQ, Kleinhofs, A., Steffenson, B.
- 6724 The Benefits and Costs of Using Organic Waste Streams in Small Scale Agriculture, Cogger, C.G., Ostrom, M., Bary, A.I., Carkner, R.W., Bristow, P.R., Miles, C.A., Stone, A.G., Sullivan, D. M., Hemphill, D.
- 7198 Cloning and Characterization of the Barley Stem Rust Resistance Genes RPG4 and RPGQ, Kleinhofs, A.
- 7232 Live and Death in Plants: Studies on Perennial Wheat as a Sustainable Alternative Cropping System, Jones, S.S., Murray, T.D.
- 7333 Mapping and Cloning of High Temperature Adult Plant Resistance Genes to Stripe Rust in Wheat, Kidwell, K.K., Campbell, K.G.*, Santra, D.K., Chen, X.M.*, Dubrovsky, J.
- 7703 Sustainability of Three Apple Production Systems: Organic, Convention, and Integrated, Reganold, J.P., Andrews, P.K.
- 8449 Molecular Characterization of a Major Gene-Rich Region of Wheat, Gill, K.S.
- Entomology**
- 0121 Biological Control in Pest Management Systems of Plants, W-1185, Piper, G.L.
- 0122 High Value Specialty Crop Pest Management, NRSP-4, Walsh, D.B.
- 0206 Development of Crop Protection Chemicals, Walsh, D.B.
- 0327 The Delay in Population Growth: A New Approach for Estimating Toxicity of Pesticides to Populations of Pest and Beneficial Organisms, Stark, J.D., Banks, J.E., Wennergren, U.

- 0337 Aphids: Ecology, Systematics, Biocontrol, Pike, K.S., Foottit, R.G.*, Pappu, H.R., Schreiber, A.A.*, Thomas, P.E.*, Stary, P.*, Unruh, T.*
- 0366 Understanding the Movement Patterns and Demography of Pests and Their Natural Enemies in Deciduous Fruit IPM Programs, Jones, V.P., Brunner, J.F., Unruh, T.*, Horton, D.*
- 0372 Mechanisms and Mitigation of Agrochemical Impacts on Human and Environmental Health, W-045, Hebert, V.
- 0381 Development of Integrated Management Systems for High Value Specialty Crops in Central Washington, James, D.G., Kenny, S.T., Eastwell, K.C., Walsh, D.B., Snyder, W.E., Barbour, J.
- 0386 Secondary Pests of Deciduous Pome Fruits, Beers, E.H., Brunner, J.F., Dunley, J.E., Jones, V. P.
- 0392 Biology and Management of Mealybugs in Washington Wine Grape Vineyards, Walsh, D.B.
- 0405 Potential of Insect Growth Regulators for Controlling Insect Pests of the Pacific Northwest, Brown, J.J., Berryman, A.A.
- 0415 Utilizing Complex Communities of Natural Enemies in Biocontrol, Snyder, W.E.
- 0416 Molecular Genetics of Honey Bee Subspecies and Selection and Breeding of New World Populations, Sheppard, W.S.
- 0426 Evaluations of Airborne Herbicide Residues on Wine Grape Production, Hebert, V., Felsot, A.S.
- 0430 Biological Control of Invasive Toadflaxes in Washington, Piper, G.L.
- 0431 Biologically Intensive Management of Arthropod Pests of Pear, Dunley, J.E., Brunner, J.F., Jones, V. P., Beers, E.H.
- 0440 Characterization of Cellular Proliferation in a Polyembryonic Parasitoid Wasp, Corley, L.S.
- 0455 Biological Diversity Studies of Arthropod Taxa, Zack, R.S.
- 0457 Understanding Transport and Fate of Pesticide Management Chemicals in Air: Integrated Field Monitoring with Laboratory Reactivity Studies, Hebert, V., Felsot, A.S., Brunner, J.F., Miller, G.C.
- 0458 Dynamics and Management of Pest and Natural Resource Populations, Corley, L.S.
- 0459 Population Control of Alfalfa Looper and Corn Earworm (Lepidoptera: *Noctuidae*) through Female Annihilation Technique, Zack, R.S., Landolt, P.J.*
- 0470 Reducing the Potential for Environmental Contamination by Pesticides and Other Organic Chemicals, W-082, Felsot, A.S., Gamedinger, A.P.
- 0524 Biology and Integrated Management of Insect and Mite Pests of Wine Grapes, James, D.G.
- 0525 Biology and Management of Mealybugs in Washington Wine Grape Vineyards, James, D.G.
- 0534 Innovative Management of Cutworms in Washington Vineyards, Walsh, D.B.
- 0543 Biology and Economic Management of Arthropod Pest of Berry Crops, Tanigoshi, L.K.
- 0589 Molecular Genetics of Honey Bee Subspecies and Selection and Breeding of New World Populations, Sheppard, W.S.
- 0604 Molecular Genetics of Honey Bee Subspecies and Selection and Breeding of New World Populations, Sheppard, W.S.
- 1090 Management of Direct Pests of Apple in Washington Tree Fruit Orchards, Brunner, J.F., Beers, E.H., Dunley, J.E., Landolt, P.J.*, Unruh, T.*
- 3417 Natural Enemy Biodiversity and the Biological Control of Aphids, Snyder, W.E.

- 3499 Alternative Prey and Biocontrol by Generalist Predators, Snyder, W.E.
- 4089 Building a Multi-Tactic Pheromone-Based Pest Management System in Western Orchards, Brunner, J.F., Beers, E.H., Riedl, H., Welter, S.C.
- 5059 Integrating Biological Control in the Management of Solanaceous Weeds, Walsh, D.B., Ferguson, H.J., Boydston, R.A.*
- 5505 Development of an IPM Program against Wood Boring Insect Pests in Poplar Plantings, Brown, J.J.
- Extension**
- 0402 The Germ City Hand Washing Program: Clean Hands, Healthy People, Craig, B.S
- 0437 Training Environment Stewards: Integrating Water Quality and Quantity Education from Mountain to Ocean, Gaolach, B.W., Robson, M., Kantor, S., Racette, P.
- Field Disease Investigative Unit**
- 0858 Investigation of Food Animal Disease Problems in the State of Washington, Fox, L.K., Hancock, D.D., Gay, J.M.
- Food Science and Human Nutrition**
- 0103 Dietary and Psychosocial Factors Affecting Self-Management of Type 2 Diabetes Mellitus, Armstrong Shultz, J., Massey, L.K., Evans, M.A., Butkus, S., Cobett, C.*
- 0118 Vitamin B-6 Supplementation and Immune Function, Shultz, T.D.
- 0128 Management of Grain Quality and Security for World Markets, NC-213, Baik, B.K.
- 0205 Factors Affecting the Quality of Washington Wine and Wine Grapes (*Vitis vinifera*), Spayd, S.E.
- 0276 Parent and Household Influences on Calcium Intake among Preadolescents, W-1003, Edlefsen, M.S.
- 0286 Can Phytoestrogens (Isoflavones) Improve Memory in Healthy Menopausal Women?, Beerman, K.A.
- 0288 Microbiological and Chemical Factors Affecting Calcium Lactate Crystal Formation in Cheddar Cheese, Clark, S., Powers, J.R., Swanson, B.G., Yuksel, G.
- 0305 Application of Spectroscopic Methods to Improve Food Quality and Safety of High Value Aquatic Food Products, Rasco, B.A.
- 0331 Dietary Astaxanthin in Inflammatory Disease: A Rheumatoid Arthritis Model in Dogs and Cats, Chew, B.P., Park, J.S.
- 0369 Development of a New Rapid Method for the Estimation of *Escherichia coli* in Foods, Kang, D.H.
- 0370 Nutrition in the Treatment of Calcium Kidney Stones, Massey, L.K.
- 0395 Reducing Risk with Food Thermometers: Strategies for Behavior Change, Hillers, V.N., Edlefsen, M.S., Kang, D.H., McCurdy, S.M., Mayes, V.E.
- 0444 Relationship between Maternal Isomeric CLA and Human Milk Isomeric CLA Concentrations; Relationship with Milk Fat Content, McGuire, M.K.
- 0522 Microbiology and Chemistry of Washington Wines, Edwards, C.G.
- 0531 Factors Influencing Wine and Wine Grape Quality in Washington, Spayd, S.E.
- 0537 Factors Affecting the Quality of Washington Wine and Wine Grapes (*Vitis vinifera*), Spayd, S.E., Edwards, C.G., Hendrix, W.G., Fellman, J.K., Keller, M., Tarara, J.M.*, Harbertson, J.
- 0560 Genetic Improvement of Beans (*Phaseolus vulgaris* L.) for Yield, Disease Resistance, and Food Value, W-150, Swanson, B.G., Hang, A.N.
- 0574 Mathematical Modeling Pathogen Reduction and Survival in Ground Meat, McCurdy, A.R., Kang, D.H., Tang, J.
- 0596 Multi-State Evaluation of Winegrape Cultivars and Clones, NE-1020, Spayd, S.E., Keller, M.

- 0607 *Lactobacillus helveticus* Enzyme Activity on Casein, Powers, J.R., Shultz, T.D., Clark, S.
- 0608 Sensory Evaluation and Chemical Analysis of Selected Wines and Foods, Ross, C.F.
- 0612 Viticultural and Winemaking Practices that Shape the Color Stability, Astringency, and Total Phenolic Content of Washington Wines, Harbertson, J.F., Spayd, S.E., Ross, C.F., Fellman, J.K., Keller, M.
- 0613 Determination of Tannin, Total Phenolics, Anthocyanins, and Polymeric Pigment Levels in Wines Produced in Washington, Harbertson, J.F.
- 0615 Assessment of Astringency in Washington State Wines Using Sensory and Chemical Method, Harbertson, J.F., Ross, C.F.
- 0719 Supplemental Support for Assessing the End-Use Quality of Washington Wheat Breeding Samples, McCurdy, A.R., Morris, C.F.*
- 0846 Enological and Viticultural Practices on Fermentation Microbiology, Chemistry, and Quality of Wines, Edwards, C.G., Spayd, S.E., Tarara, J.M.*, Fellman, J.K., Keller, M., Paznokas, J.L.
- 0905 Nutrient Bioavailability - Phytonutrients and Beyond, W-1002, Shultz, T.D.
- 3468 Surface Hydrophobicity and Functionality of Proteins in the Molten Globule State, Powers, J.R.
- 3505 Engineered Enzyme-Based Time Temperature Indications (TTIS) for Validating Food Pasteurization Processes, Rasco, B.A., Kang, D.H., Tang, J.
- 4118 Effect of Isomeric Conjugated Linoleic Acid Intake on Milk Fat Content and Growth during Early Postnatal Period, McGuire, M.K.
- 6305 Non-Invasive Method for Predicting Safety and Quality of Foods, Rasco, B.A.
- 8467 Surface Hydrophobicity and Functionality of Proteins in the Molten Globule State, Powers, J.R.
- Horticulture and Landscape Architecture**
- 0038 Breeding Superior Strawberry Cultivars for the Pacific Northwest, Moore, P.P., Bristow, P.R., Tanigoshi, L.K., Kempler, C., Finn, C.E.
- 0044 Potato Cultivar Evaluation and Commercial Potato Seed Lot Trial, Pavek, M.J., Pelter, G.Q., Havens, D.M., Sorensen, E.J., Inglis, D.A.
- 0156 Multidisciplinary Evaluation of New Apple Cultivars, NE-183, Barritt, B.H.
- 0168 Gene Transfer for Potato Variety Development, Brown, C.R.*, Hamm, P.*, Love, S.*, Mosley, A.*, Navarre, R.*, Novy, N.*, Riga, E., Williamson, V., Wrolstad, R., Crosslin, J.M.
- 0217 Cultural and Cultivar Studies for Alternative Crop Production in a Maritime Climate, Moulton, G.A.
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- 0285 Environmental/Cultural Factors on Water Stress Resistance/Growth/Cold Hardiness of Landscape Plants, Hummel, R.L.
- 0298 Bioregulation of Vegetative Growth and Fruit Development in Apple, Pear and Sweet Cherry for Maximum Production Efficiency and Fruit Quality, Elfving, D.C., Curry, E.*, Drake, S.R.*, Granatstein, D.M., Grove, G.G., Lang, G.*, Mazzola, M.*, McFerson, J., Whiting, M., Xiao, C.L.
- 0321 Calcium/Calmodulin--Mediated Transcriptional Network in Plants, Poovaiah, B.W.
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- 0375 Alternative Cropping Systems, Miles, C.A., Bristow, P.R., Myers, J., Stone, A., Cogger, C.G., Granatstein, D.M.
- 0377 Production Horticultural and Integrated Management Systems of Grapes, Tarara, J.M.*, Keller, M., Olmstead, M., Smithyman, R.P., Pierce, F.J., Spayd, S.E.
- 0412 Development and Application of Harvesting and Processing Technologies for Production of Value Added Fruit and Vegetable Products, Clary, C., Cavalieri, R.P., Durfey, J. E., Fellman, J.K., Edwards, C.G., Pierce, F.J., Spayd, S.E., Willemsen, K., Tang, J.
- 0420 Integrating Whole-Tree Physiological, Horticultural, and Genetic Research in Prunus Tree Fruits, Whiting, M.
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- 0428 Grapes Yield Components and Quality, Keller, M.
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- 0526 Rootstock Evaluation: Trial Establishment and Field Grafting, Keller, M.
- 0528 Evaluation of Wine Grapes Cultivars and Selections for Cool Maritime Climate, Moulton, G.A.
- 0532 Automating Yield Estimation, Tarara, J.M.*
- 0533 Using Whole-Vine Photosynthesis to Understand the Effects of Water Stress on Premium Wine Grapes, Tarara, J.M.*
- 0593 Mechanical Harvesting of Asparagus, Clary, C., Durfey, J.E., Cavalieri, R.P.
- 0599 Development of Sustainable Viticulture Practices in the Pacific Northwest, Olmstead, M.A.
- 0624 Potato Cultivar Evaluation and Commercial Potato Seed Lot Trial, Pavek, M.J., Hiller, L.K., Trent, M.A.
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- 0797 Postharvest Biology of Fruit, NE-1018, Fellman, J.K., Kupferman, E.M.
- 0910 Isolation of a Flavonol Receptor Using a Photoaffinity-Tagged Kaempferol Ligands, Taylor, L.P.
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- 1984 Production and Environmental Inputs Affecting Yield and Quality of Vegetable Crops, Hiller, L.K.
- 3324 Functional Analysis of Calcium/Calmodulin-Regulated ATSR Family Involved in Plant Stress Response, Poovaiah, B.W.
- Human Development**
- 0566 Stress, Appraisal, and Coping, Power, T.G.
- IMPACT Center**
- 0171 International Marketing Program for Agricultural Commodities and Trade, Wahl, T.I.
- 0451 Enhancing Competitiveness of Agricultural Products, Wahl, T.I.
- 0541 International Marketing Program for Agricultural Commodities and Trade (IMPACT) Center, Wahl, T.I.
- 0555 Quantitative Analyses of International Food and Commodity Markets, Wahl, T.I.
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- 0800 Publication of Research Bulletins, Fedale, S.V.

Institute of Biological Chemistry

- 0119 Regulation of Photosynthetic Processes, NC-142, Okita, T.W., Edwards, G.E.
- 0197 The Flexibility of the Light Reactions of Photosynthesis, Kramer, D.M.
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- 0253 Lipid Biosynthesis in Leaves and Seeds, Browse, J.A.
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- 0590 RNA Targeting in Plants, Okita, T.W.
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- 4589 Metabolic Engineering of Plants for Enhanced Productivity, Okita, T.W.
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- 0113 Effects of Enhanced UV-B Radiation and CO₂ Levels on Ecophysiology of Tree Species, Bassman, J.H.
- 0226 Assessing the Value of Cutthroat Trout (a Species at Risk) to Grizzly Bears in Yellowstone National Park, Robbins, C.T.
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- 0362 Restoration Ethnobotany: Applying Traditional Ecological Knowledge, Hardesty, L.H.
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- 0561 Analysis of the Inland-Northwest Wood Products Industry, Blatner, K.A.
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- 0602 Riparian Systems: Interfacing Agriculture with the Water Bodies of the Pacific Northwest, Dobrowolski, J.P.
- 0603 The Origin and Genetic Diversity of Invasive Reedcanary Grass (*Phalaris arundinacea*) in the Pacific Northwest, Hardesty, L.H.
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- 9954 Growth Chamber Facility, Dreesmann, D.
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- 0274 Development and Implementation of Direct-Seed Cereal Based Cropping Systems for the Inland Northwest, Cook, R.J.
- 0290 Developing Management Strategies for Plant Viruses and Virus-Like Agents that Infect Perennial Vegetatively-Propagated Crop Plants in the US, Eastwell, K.C., Howell, W.E., Crosslin, J.M., Gritsenko, M.
- 0300 Population Biology of Plant Pathogenic Fungi, Peever, T.L.
- 0313 Systematics and Biology of Economically Important Fungi in the Pacific Northwest, Glawe, D.A., Carris, L.M., Grove, G.G., Rogers, J.D.
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- 0365 Integrated Disease Management of Small-Seeded Vegetable Seed Crops in Washington State, duToit, L.J.
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- 0387 Management of Disease on Ornamental Bulbs and Cut Flowers, Chastagner, G.A.
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- 0390 Biology and Management of Mealybugs in Washington Wine Grape Vineyards, Eastwell, K.C.
- 0409 Eradication, Containment, and/or Management of Plum Pox Disease (Sharka), NE-1006, Eastwell, K.C.
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- 0460 Improving Disease Management of Soilborne Diseases of Edible Legumes, Porter, L.D.*
- 0521 Management of Viruses in Washington's Vineyards, Eastwell, K.C.
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- 0545 Molecular and Biological Approaches to Studying Emerging Virus Threats, Pappu, H.R.
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- 0564 Managing Plant Microbe Interactions in Soil to Promote Sustainable Agriculture, W-1147, Riga, E., Weller, D.M.*, Paulitz, T.*, Okubara, P.
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- 0670 Biology and Control of Cephalosporium Stripe in Winter Wheat, Murray, T.D., Jones, S.S.
- 0678 Disease Warning Systems for Potato and Mint, Johnson, D.A., Alldredge, J.R.
- 0795 Etiology, Epidemiology and Control of Powdery Mildew in Stone Fruits, Xiao, C.L., Grove, G.G.
- 0823 Control of Cereal Rusts of Wheat and Barley, Chen, X.M.*
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- 0947 Metabolites of Biocontrol Agents that Suppress Root Pathogens of Wheat and Barley, Weller, D.M.*, Peever, T.L., Paulitz, T.*
- 1262 National Program for Controlling Virus Diseases of Temperate Fruit Tree Crops, NRSP-5, Eastwell, K.C., Howell, W.E., Cavalieri, R.P., Murray, T.D.
- 1767 Mycobiotic, Revisionary, and Monographic Studies in Xylariaceae and Related Families, Rogers, J.D.
- 1844 Regulation of Disease Resistance Genes in Plants, Hadwiger, L.A.
- School of Economic Sciences
- 0160 Interfacing Technological, Economic, and Institutional Principles for Managing Inter-sector Mobilization of Water, W-1190, Huffaker, R.G.
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- 0269 Pacific Northwest Farmers' Risk Management Strategies: Considering Dynamics, New Farm Programs, and WA Specialty Crops, Wang, H.H.
- 0275 Agricultural Production, Processing, Trade, and Environmental Quality, Shumway, C.R.
- 0278 Selecting Operational Parameters Which Both Impact and Monitor Agribusiness Performance, Duft, K.D.
- 0299 Fisheries Management and Marketing of Marine and Aquaculture Seafood, Matulich, S.C.
- 0343 Strategic Freight Transportation, Casavant, K.L.

- 0347 Research Design and Managing Risk in Agricultural Conservation and Pest Management Systems, Young, D.L.
- 0378 Improving the International Competitiveness of the Washington/Oregon and Michigan Asparagus Industries, Folwell, R.J.
- 0383 Agricultural and Natural Resource Public Policy Analysis Using a General Equilibrium Approach, Holland, D.W.
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- 0540 Collective Reputation: Firm Incentives and Empirical Analysis, McCluskey, J.J.
- 0544 The Impacts of Policies Affecting Resources, Chouinard, H.H.
- 0547 Improving the International Competitiveness of the Washington/Oregon Asparagus Industries, Folwell, R.J.
- 0549 Analyzing the Competitive Position of the Washington Wine Grape Industry, Folwell, R.J.
- 0570 Marketing, Trade, and Management of Fisheries and Aquaculture Resources, W-1004, Matulich, S.C.
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- 0605 Impact Analysis and Decision Strategies for Agricultural Research, NC-1003, Shumway, C. R.
- 0609 Commodity Markets: Food Safety, Invasive Species, and Econometrics, Marsh, T.L.
- 0610 The Economics of Obesity and Nutrition, Smith, T.G.
- 0611 Improving the International Competitiveness of the Washington/Oregon and Michigan Asparagus Industries, Folwell, R.J.
- 0620 Competitiveness of Agricultural Products, Wahl, T.I.
- 0621 Rural Healthcare Access and Farm Production Efficiency, Rosenman, R.E.
- 0998 Rural Communities, Rural Labor Markets and Public Policy, NE-1011, Holland, D.W.
- 3540 Grocery Store Shelf Labels, Nutrition and Pricing Information, and Consumer Choice, McCluskey, J.J.
- Department of Statistics**
- 0254 Evaluation of Methods Used to Analyze Resource Selection Data, Alldredge, J.R.
- 0340 The Development of Tools for the Analysis of Binary Response Data, Evans, M.A.
- Veterinary Microbiology and Pathology**
- 0261 Enteric Diseases of Swine and Cattle: Prevention, Control, and Food Safety, NC-1007, Besser, T.E.*, Gay, J.M., Hancock, D.D., Call, D.R.*, Cobbold, R.*
- Wood Materials and Engineering Laboratory**
- 0453 Molecular Scale Engineering of Lignocellulose Composites, Laborie, M.G.
- 0582 Development of Cost Effective and Energy Efficient Applications of Microbial Polyesters, Zhang, J.

8453 Physico-Chemical Aspects of Hybrid Poplar
Hot-Pressing, Laborie, M.G., McDonald,
A.G.

0419 Postdoctoral Fellowship: Carbon Dioxide
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Non-CAHNRS Projects

0442 Optimizing Fastener Spacing in Multiple
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Loading, Dolan, J.D., Loferski, J.R.

* = USDA-Agricultural Research Service

W-xxxx = Western Region multistate research committee

NC-xxxx – North Central Region multistate research committee

NE-xxxx = North Eastern Region multistate research committee

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