

Save the Date!

**CSU Day at the
National Western Stock Show
Saturday, January 19, 2008**

*Don't miss the 2007 Livestock Leader Presentation
with the Department of Animal Sciences at 3:00 p.m.
in the Swift Centennial Room, Third Floor Exposition Hall*



Join Us for These Upcoming Events!

1870 Dinner

Friday, October 26
Lory Student Center, Main Ballroom
Contact: (970) 491-6274
or CAS_VIP@mail.colostate.edu

Block and Bridle's Little National Western

Saturday, November 3
First Species starts at 10:00 a.m.
ARDEC, Taylor Auditorium, Fort Collins
Contact: (970) 491-3969
or Lucy.Whitehead@colostate.edu

Range Beef Cow Symposium XX

December 11-13
The Ranch, Larimer County Fairgrounds and
Events Complex
Contact: (970) 491-7604 or (970) 491-6233

Fall Commencement

Saturday, December 15, 7:30 p.m.
Moby Arena
Contact: (970) 491-6274
or Kathleen.Schultz@colostate.edu

National Western Stock Show CSU Day

Saturday, January 19, 2008
National Western Stock Show Complex, Denver
Contact: (970) 491-6274
or CAS_VIP@mail.colostate.edu
or visit www.nationalwestern.com
for NWSS ticket sales

Livestock Leader Presentation and Animal Sciences Social

Saturday, January 19, 2008
3:00 p.m., Swift Centennial Room, Third Floor
Exposition Hall
Contact: (970) 491-3969
or Lucy.Whitehead@colostate.edu

Animal Sciences Judging Teams Reunion

Sunday, January 20, 2008
Time and Place, TBA
Contact: (970) 491-3969
or Lucy.Whitehead@colostate.edu

University Wide Career Fair

February 6-7, 2008
Lory Student Center, Main Ballroom
Contact: (970) 491-3721
or Mary.Christensen@colostate.edu

Distinguished Alumni Banquet

Saturday, February 9, 2008, 5:00-10:00 p.m.
Fort Collins Hilton
Contact: (970) 491-6274
or CAS_VIP@mail.colostate.edu

Calving Ease Plus 32nd Annual Bull Sale

Saturday, March 29, 2008, 1:00 p.m.
ARDEC, Taylor Auditorium, Fort Collins
Contact: (970) 491-1442

Beef Improvement Center Sale

Monday, April 7, 2008
Saratoga, Wyoming
Contact: (970) 491-1442

Animal Sciences Spring Branding Banquet

Friday, April 18, 2008, 6:30 p.m.
B.W. Pickett Equine Teaching Research Center,
Fort Collins
Contact: (970) 491-3969
or Lucy.Whitehead@colostate.edu

Legends of Ranching Sale

Saturday, April 26, 2008
B.W. Pickett Equine Teaching Research Center,
Fort Collins
Contact: (970) 491-1442

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Fall 2007



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Colorado
State
University



Highlighting Generations of Ranchers, Farmers, and CSU Alumni

Generation after generation, families pour their hearts and souls into ranches and farms throughout Colorado. With so many opportunities for young graduates to travel and take positions in corporate America, there are still many ranchers and farmers who choose to return to their roots, families, and rural communities.

Amen Angus Farms, located at Iliff, Colo., is a farm that traces its roots back four generations and has two generations of Colorado State University alumni. Ken Amen currently operates the ranch along with his father, Walter Amen; his wife, Bonnie; and his son-in-law, Mat Lewis.

Ken's grandfather, a German from the Volga River Valley in Russia, arrived in America in 1901 and settled in Colorado. He purchased the land that is now Amen Angus Farms in 1914 and it has stayed in the family ever since.

Ken and his brother, Ed, grew up working on the farm with their father and mother, Louise. Ken met Bonnie at Northeastern Junior College, where they judged together on the Livestock Judging Team. After the two were married following their graduation from NJC, they moved to Fort Collins, where Bonnie worked at a soil testing lab so that Ken could continue his education at Colorado State. Both Ken and his brother graduated from CSU with degrees in the agricultural field.

While Ken's brother now lives in California, Ken and Bonnie chose to go back to the farm after graduating from CSU as he had always planned.

"It's what I always wanted to do," says Ken. "I had the opportunity to buy some Angus cattle when I was a sophomore in high school and my goal was always to return and work on the family operation."

Ken had received his degree in agricultural business while at CSU, and his three daughters followed in his footsteps by becoming dedicated CSU alumnae as well and have also stayed close to the family farm. Wendy, the eldest daughter, received a degree in both agricultural economics and animal science from CSU in 1990, followed with a master's degree from the University of Minnesota. Wendy currently teaches economics courses for Colorado Community Colleges Online after teaching agriculture business at Northeastern Junior College for 10 years. She and her husband, Mat Lewis, now live a stone's



The Amen Family

throw away from Ken and Bonnie, where Mat works the Amen Angus Farm with his father-in-law. Heidi received an agricultural business degree in 1993 and is now the office manager and controller of a feedlot in Brush, Colo. Heather, the youngest, received agricultural business and animal science degrees in 2005 and moved back to Sterling near her family, where she is a youth livestock coordinator.

Ken emphasizes the importance of the family operation and points out that every family member is an integral part of the farm and ranch. Both Ken's mom, Louise, and his wife, Bonnie, had always helped on the operation while at the same time were very involved in 4-H and Extension. All three daughters continue to raise cattle and help on the operation in every aspect. Ken and

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The Wide Scope of Agriculture in the 21st Century

A Message from the Dean

During my first month here at Colorado State University four years ago, I attended a meeting with the nursery industry. I was immediately reminded of the multiple generations of alumni from the College of Agricultural Sciences within one single family applying their efforts to the land. As I met more of these "multi-generational alumni" families, it became clear how diverse Colorado agriculture and the College really are: While some rural ranches boast nearly four generations of Colorado State alumni, there are urban families in the horticulture and landscape industries that have their fair share of multi-generational alumni, as well.

Agriculture is truly a culture, and that becomes even more apparent in our 21st-century world. Whether it's in a rural or urban environment, one generation supports the next, and the cycle of learning and progress continues. Our students benefit from the hands-on experiences they obtain both here and at home, which they apply either toward an industry career or to the family operation as generations before them have done.

One of the initiatives in the College's strategic plan is rural development and giving students, community members, and industry partners the tools to sustain the rural lifestyle of agriculture and other enterprises in the 21st century. For example, one study looks at the impact of water well closures and



how that impacts the family farm and the rural community. The Department of Agricultural and Resource Economics studies agricultural tourism in the state and shows how that industry may affect your local economy. Likewise, the CARL program (Colorado Agricultural and Rural Leadership) aims to provide further education and knowledge for working agriculturalists to use to further their ranch, farm, or rural community.

Colorado State also typically partners with the Agricultural Outlook Forum to discuss pertinent issues surrounding the state's agricultural industry. Next year, on Feb. 28, the forum will be converted to the Governor's Agricultural Forum and will focus on rural development as the main topic of discussion. One question on the table is how to create opportunities for young college students to return to rural environments. This keeps the cycle of generational ranches, farms, and nurseries alive and allows the rural communities to adapt and survive in the context of 21st-century agriculture.

Although we are in the midst of changing agricultural communities, it is not unlike the changes faced by generations before. Colorado State and the College of Agricultural Sciences will continue to provide the tools and knowledge necessary to preserve agriculture in both urban and rural communities throughout the state, and we thank you for supporting those efforts.

Marc A. Johnson
Dean, College of Agricultural Sciences

CSU Libraries Web Site Celebrates 100 Years of the Rocky Mountain Farmers Union

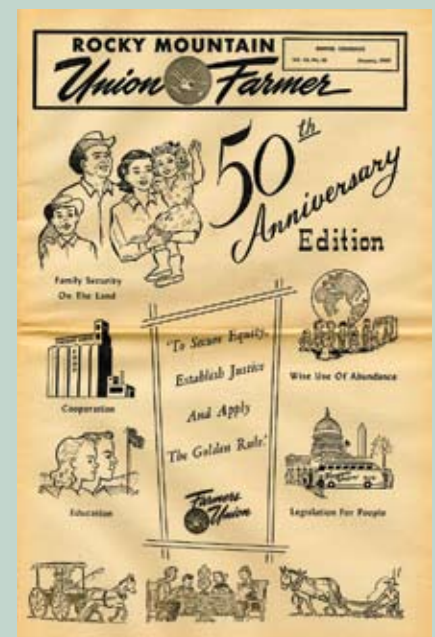
During the past century, the Rocky Mountain Farmers Union, or RMFU, has served the western agricultural community by providing educational programs, supporting pro-family farm legislation, and developing marketing cooperatives to encourage the improvement and survival of the family farm in the Rocky Mountain region.

In honor of the 100th year anniversary (officially on May 17 of this year), Colorado State University's Colorado Agricultural Archive selected photographs

and documents from the Records of the Rocky Mountain Farmers Union for a new online exhibit, "A Hundred Images for a Hundred Years."

Log on to <http://lib.colostate.edu/archives/agriculture/rmfu> to view the people, harvests, livestock, conventions, and historical documents of RMFU's last 100 years.

Front page of the 50th anniversary edition of the Rocky Mountain Union Farmer, January 1959.



Jan Leach

Two Agricultural Sciences Professors Designated University Distinguished Professors of 2007

In April of this year, President Larry Edward Penley bestowed the title of University Distinguished Professor – the highest recognition awarded for outstanding accomplishments in research and scholarship – on four CSU professors.

Two of the four are professors in the College of Agricultural Sciences: Jan Leach, a professor of plant pathology in the Department of Bioagricultural Sciences and Pest Management and John Sofos, a professor in the Department of Animal Sciences known for his food safety research.

A maximum of 12 current faculty members at the University may hold the rank of University Distinguished Professor, which is a permanent designation that carries into retirement. To obtain the rank, faculty members are nominated through an extensive review process and must be approved by the current University Distinguished Professors.



John Sofos

Call for Entries: Agricultural Photo Contest Celebrates Ten Years

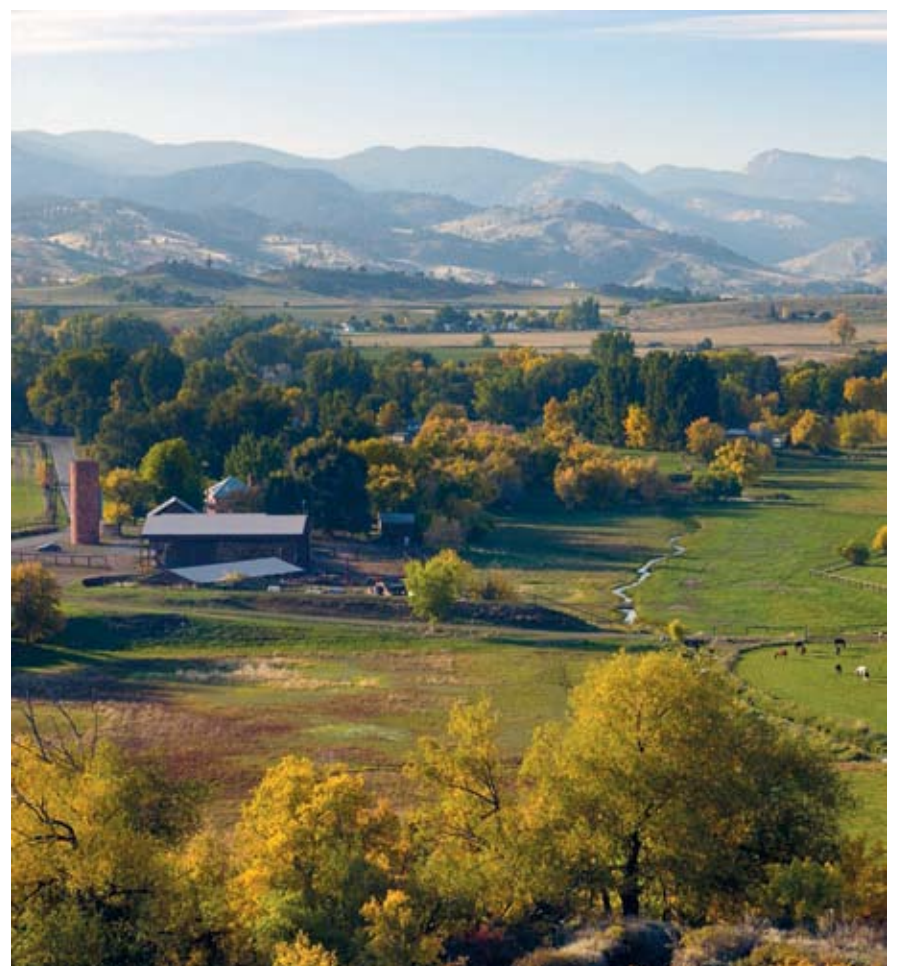
From wheat waving in the wind and cattle in the mist, to a plethora of colorful peppers, Colorado agriculture is evident across the state. The "Colorado... It's AgriCultural" photography contest is celebrating its 10th anniversary and is seeking entries for this year's contest.

"I encourage photographers of all ages to capture the essence of Colorado agriculture on film," said Commissioner of Agriculture John Stulp. "This annual photo contest not only celebrates the splendor of Colorado agriculture but also its importance to the state's economy."

Entries must be submitted to the Colorado Department of Agriculture with an official entry form by December, 31, 2007. All entries must relate to Colorado agriculture in some way. Prizes will be awarded in five subject areas: **People, Livestock, and Crops**, and to celebrate the 10th anniversary, there are two special additional categories, **Historical Colorado Agriculture** and **Yesterday and Today**. Yesterday and Today category entries should depict the same agricultural location at two different points in history.

Judging will be based on theme, creativity, and technical quality. All winning photographs will be displayed in the Beede-Hamil Agriculture Building at Northeastern Junior College in Sterling, Colo.

Visit www.coloradoagriculture.com or call (303) 239-4119 for complete contest rules and an entry form. The contest is sponsored by the Colorado Department of Agriculture, the AgInsights Committee, and Northeastern Junior College.



Supporting the ‘Culture’ of Agriculture at Colorado State University

“I want to support the students” is the rallying cry from donors, alumni, and friends of agriculture colleges around the country, especially at Colorado State University. That usually translates into scholarships, which help offset the costs of tuition, room and board, and books for students who attend the University. Currently, the College of Agricultural Sciences offers scholarships to 304 students with 151 scholarships, totaling \$606,814. These scholarships are a result of your tremendous generosity, and empowering students to receive a world-class education is a tremendously valuable effort that we are committed to supporting.

With that said, thinking more broadly about “supporting our students” is what we call “supporting the ‘culture’ of agriculture,” which is what we want to explore with you. In order for our students to have a fulfilling college experience, they not only need to attend but also must have experiential learning and access to applied and basic research opportunities. They must learn in state-of-the-art laboratories and classrooms, and they should be taught by

world-class faculty who solve industry problems. All of these areas of giving and types of support are vital to training future producers, employees, and leaders for agriculture in Colorado, in our nation, and around the world.

It is no secret that traditional financial support for higher education and agriculture, specifically, has seen sharp declines or at least flat funding for years both in Colorado and across our country. Continued private support will prove to be more and more critical over the coming years. By supporting not only scholarships but also endowed faculty positions, renovated and new facilities, and hands-on student learning opportunities and programs, you are still supporting students AND you are preserving and endorsing the College of Agricultural Sciences as it supports the culture of agriculture in Colorado, the nation, and the world.

Thank you for all that you have done to support students and agriculture at Colorado State University, and please consider all of these opportunities as we move forward together in the coming years!

– Doug Mayo, Director of Development

Meet the New Assistant Director of Development

Kris McKay (Jensen), the newly appointed Assistant Director of Development for the College of Agricultural Sciences, joined the Development Team early this summer.

The first two years of McKay’s career was spent at Swift & Company, in Greeley, CO, as part of their management training program and then assumed all responsibility for the corporate headquarters’ college relations and recruiting. Her time there also included involvement in numerous community relations campaigns and organizations on behalf of Swift such as the American Cancer Society and United Way in both Greeley as well as all communities where the company has beef and pork processing facilities.

McKay grew up in Fowler, CO, a small rural community in the southeastern corner of the state surrounded by agriculture and friendly people. Kris then obtained her B.S. in Agribusiness from Kansas State University while also playing on the women’s volleyball team, winning one Big 12 championship and appearing in the NCAA tournament all four years.

Kris was recently married to Ben McKay, and they now reside in Loveland.

She welcomes anyone to stop by her office and say hello, as she is anxious to meet the students, faculty, alumni, and friends of CSU.

The College of Agricultural Sciences Development Team



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New Funding and Support

Allied Industry Council Scholarship

Since 1992, the Allied Industry Council had supported an annual scholarship in the College of Agricultural Sciences. Recently, the council created an endowed scholarship to ensure the funding continues for generations to come. The support is intended for a Colorado resident who is an entering freshman or transfer student demonstrating financial need. The student may continue to receive the scholarship for up to four years as long as the criteria are continually met.

Cargill Post-Doctoral Fellow Support

Cargill, Inc., has a long history of supporting education and research in the Department of Soil and Crop Sciences. The creation of mutually beneficial relationships for both Cargill and CSU led to the creation of the Cargill Post-Doctoral Fellow Support fund. The funding will support one postdoctoral fellow position for one year, providing salary, travel funds, supplies, and other materials related to research on the genetics and development of oilseed brassica species in Colorado.

Church & Dwight Potassium Project

Church & Dwight Company, Inc., has donated discretionary funds to support the Church & Dwight Potassium Project in the Department of Animal Sciences. This project is analyzing potassium inputs for cattle nutrition and is being conducted at CSU’s SECRC Feedlot in Lamar, Colo.

Environmental Care & Share, Inc. Graduate Student Support

Environmental Care & Share, Inc., has established a working relationship with the College of Agricultural Sciences by creating support for an assistantship and providing travel funds, supplies, and materials for a graduate student researching chronic disease health attributes of organic and bio-produced fruit and vegetables. The current Ph.D. student is under the supervision of Cecil Stushnoff in the Department of Horticulture and Landscape Architecture.

Next Century Judging Teams – Otis and Elsie Teets

Otis Teets recently established an endowment in his and his late wife’s names to support and feed directly into the already existing Next Century Judging Teams fund in the Department of Animal Sciences. The funds are used to provide discretionary operational support related to judging team activities in the department. Otis Teets graduated with an animal sciences degree in 1950.

Organic Hops Project

The Organic Hops Project fund has been created to fund research in the Department of Horticulture and Landscape Architecture. Research will be conducted by a graduate student on organic hops and how they relate both nutritionally and economically to local micro-breweries. ODell Brewing Company and New Belgium Brewery have already provided financial support for field and lab supplies, travel, labor, and other expenses.

Colorado's Agritourism Market Climbing, Says New Colorado State University Report

Colorado's abundant wildlife, vineyards, and vast agricultural landscapes help draw thousands of visitors to the state and are ripe in potential to anchor emerging agritourism markets, according to a recent Colorado State University study.

Hunting and fishing excursions, camping, wine tasting and microbrewery visits, farm and ranch visits, wildlife viewing, and food festivals are all considered elements of the state's agritourism sector. In terms of popularity:

- Farm activities were the top draw (60 percent of visits in southcentral Colorado; 61 percent in the mountain region).
- Culinary activities came in second (39 percent of Western Slope visits; 34 percent of Front Range visits).
- Heritage activities such as visiting farm and ranches or museums that showcase the agricultural history of the state were third.
- Counties in Colorado's central mountain region witnessed the most agritourism visits in the state followed by the Western Slope and southwestern Colorado.
- A large number (45 of 64) of Colorado's counties hosted visitors.

"Summer and fall had the highest agritourism visitation rates," said Dawn Thilmany, professor in Colorado State's Department of Agricultural and Resource Economics, who led the study with Martha Sullins from Colorado State University Extension in partnership with Colorado Department of Agriculture's Markets Division.

"In a state known for its skiing, agricultural activities have shown the potential to provide a real boost to Colorado's tourism efforts outside of the winter months," Thilmany said. "Increased visitations during these times help fill the underutilized capacity of lodging and service industries."

More than 20 percent of those surveyed took more than three agritourism trips each year, offering great potential for farm and ranch enterprises considering agritourism activities, according to the report.

Tourists from outside Colorado reported spending an average of \$860 per trip; in-state tourists reported spending an average of \$368, according to the report. Both in-state and out-of-state tourists said they would spend more



Farm activities draw the most visitors in the state's agritourism sector, which has recently become a strong emerging market in Colorado.

during their next trip to Colorado (\$450 for state residents; \$1,023 for out-of-state tourists). Among the more frequent agritourism travelers, about 56 percent were Colorado residents.

A next step in the study is to look more closely at the total contribution of this sector to Colorado's tourism industry and total economy.

"We found there is sufficient interest in agritourism in Colorado to warrant active joint planning by communities and the agritourism enterprises they support," Thilmany said, offering as an example a joint-marketing plan of Grand Junction's wine country. "Many regions of Colorado already see significant amounts of visitors to farm- and ranch-based diversions. Through coordinated marketing efforts, these regions can continue to capitalize on agritourism activities."

Irrigated Agriculture is an Engine for Economic Activity in Rural Communities

James Pritchett, Assistant Professor, Agricultural and Resource Economics

Water is an important natural resource that contributes to the Colorado's economic, cultural, and social well-being. But as recent events have shown, our limited water supply has many competing uses and is undergoing many rapid changes. Water rights are being voluntarily transferred from irrigated agriculture to municipal use, groundwater supplies are being sufficiently depleted so that pumping is too costly relative to the value of the crops, and wells without sufficient augmentation are being retired. Ultimately, this means fewer irrigated acres, and the economic impacts of this reduced activity are a key concern for rural communities.

How important is irrigated agriculture to rural communities? Quantifying cash receipts is one way to measure the impact of irrigated agriculture to Colorado's economy. When tallied as sales at the farm gate, agricultural receipts generated roughly \$5.4 billion in 2005, or about 2 percent of Colorado's general economic output. About 40 percent is derived from crop sales, with the remainder from livestock sales. Irrigated cropping generates approximately \$1.62 billion in a year, or about 75 percent of all crop receipts.

Of course, the economic contribution of agriculture doesn't stop at the farm gate. For example, irrigated crop production supports commercial livestock, meat-packing, and dairy industries. These primary industries encourage economic development directly, through the purchase of inputs, and indirectly, through the wages and salaries of employees. Without other viable local base industries, a reduction in the revenue generated in the agricultural sector will have adverse economic impacts throughout the regional economy. This begs the question, "How important is irrigated agriculture's activity to the regional economy?"

Recent research from Colorado State University and the Colorado Water Resources Research Institute provides insights¹. First, irrigated agriculture's contribution to economic activity varies by region (Table 1). The second column of Table 1 indicates the proportion that all agricultural receipts (crops and livestock) make of the region's total economy. Measured at the farm gate, production agriculture makes a significant portion of sales for the Rio Grande basin at 48 percent of the total output. In the South Platte, production agri-

Table 1. Irrigated Agriculture and Economic Activity for Colorado Regions

Region	Farm Gate Receipts as a Percent of Total Regional Output ^a	Economic Activity Generated per Acre of Irrigated Cropland	Representative Cropping Pattern
East Arkansas	31%	\$428	Forage Crops
Republican	37%	\$678	Continuous Corn, Alfalfa
Rio Grande	48%	\$1,127	Potatoes, Barley, Alfalfa
East South Platte	2%	\$690	Corn, Alfalfa, Sugar Beets

^aAll receipts from production agriculture


culture is a significant industry but relative to all economic activity, it makes a smaller proportion. Simply put, the South Platte basin economy has more sources of economic activity when compared to the Rio Grande region.

The third column of Table 1 includes farm gate sales but also measures the inputs purchased to support irrigated cropping. More specifically, economic activity includes the following.

- **Direct activity:** Revenue flows from the sale of crops.
- **Indirect activities:** The revenue generated by the demand for inputs from other industries. For instance, a farmer indirectly supports businesses supplying inputs such as fertilizer and seed.
- **Induced activity:** The revenue generated as labor spends its wages in the regional economy in areas such as supermarkets, pharmacies, and banks.

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¹ J. Thorvaldson and J. Pritchett. "Economic Impact Analysis of Irrigated Acreage in Four River Basins in Colorado." Colorado Water Resources Research Institute Completion Report. Fort Collins, Colo. Located at <http://www.cwrr.colostate.edu/pubs/series/completionreport/crlist.htm>.



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Meat Science Program in Animal Sciences Provides Research to Industry and Consumers

Animal agriculture is a major economic sector in the United States, and the meat industry contributes substantially to the U.S. economy. Each year, 30 to 35 million (26.5 million fed steers and heifers) cattle, 80 to 92 million hogs, and 5 to 7 million lambs are marketed in the United States. To remain competitive, the industry must provide consumers with products that meet their demands for safety, wholesomeness, quality, convenience, and price.

The Center for Meat Safety and Quality (CMSQ) consists of a multidisciplinary group of scientists in the Department of Animal Sciences at Colorado State University having as a goal to address national and global issues related to meat safety and quality. These issues originate from meat safety and quality problems or research needs arising among those in the consuming public, government agencies, public health authorities, commodity groups, and industry. It is the intent of the CMSQ to focus on research, development, and delivery – where “delivery” includes publication of research results plus transfer of technology. The center at Colorado State University is uniquely positioned, staffed, and equipped to respond, rapidly

and competently, to meat safety and quality issues. The center’s staff has experience in multiple areas of meat safety and quality and are in a position, with flexibility, to conduct research and to respond swiftly and without bias to such issues.

The Meat Science Program at CSU consists of faculty in the Department of Animal Sciences, and the collective expertise of the faculty members covers all aspects of meat science from conception to consumption. Faculty associated with the program are:

- Keith E. Belk, Ph.D., professor
- Lawrence Goodridge, Ph.D., assistant professor
- Temple Grandin, Ph.D., associate professor
- Kendra Kerr Nightingale, Ph.D., assistant professor
- John A. Scanga, Ph.D., associate professor and Extension meat specialist
- Gary C. Smith, Ph.D., Monfort Professor, Emeritus University Distinguished Professor
- John N. Sofos, Ph.D., University Distinguished Professor
- J. Daryl Tatum, Ph.D., professor

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Students participate in the Meat Science Program, researching global issues related to meat safety and quality.

First W.D. Farr Scholarship Awarded to Two Animal Sciences Students

The academic careers of two outstanding animal sciences graduate students have been given a lift with scholarships awarded in honor of one of the cattle industry’s greatest pioneers. The National Cattlemen’s Foundation honored W.D. Farr through two annual \$12,000 graduate scholarships bearing his name. Farr was fortunate enough to receive this honor and award these scholarships prior to his passing in August 2007.

Sandra Gruber is currently working on her Ph.D. program at Colorado State University’s Department of Animal Sciences. Sandra’s research focuses on identifying factors that influence beef tenderness.

Dale Woerner is also a Ph.D. candidate in the Department of Animal Sciences at Colorado State University. Woerner’s research interests include red meat quality, shelf-life stability, instrument prediction of red meat yields, and red meat safety.

W.D. Farr was president of the National Cattlemen’s Association in 1970 and was the first president of the National Cattlemen’s Foundation. His career in agriculture has spanned 75 years, including innovations in cattle feeding, uniform beef grading, water conservation and management, and banking and finance.



Sandra Gruber (third from right) accepts the W.D. Farr Scholarship.

Animal Sciences Plays Major Role in CSU Supercluster

The Colorado State University Supercluster is a multidisciplinary alliance that integrates experts from many fields with the goal of improving quality of life – by taking research innovations to the global marketplace more efficiently and at an accelerated pace. Superclusters focus on overlapping areas between Colorado State University’s internationally competitive research and the great global challenges, such as infectious disease, agriculture, energy and the environment.

The Department of Animal Sciences is proud to play a major role in CSU’s Infectious Diseases Supercluster, the Food Safety Cluster. The increasing complexity of food production, processing, and distribution systems – as well as the continuous development of new products in response to consumer concerns and to meet their demands for convenience in food preparation – offer challenges for producers, processors, distributors, retailers, researchers, regulators, and public health authorities to ensure exemplary food product safety and quality at a reasonable cost. Assuring that consumers have access to a dependable supply of safe and high-quality food products is the mission of the Food Safety Cluster.

In general, food safety is a dynamic and challenging issue that requires the generation of new information and continuous re-evaluation of existing knowledge in order to counter newly developed, perceived, or recognized threats or risks and to develop effective and economic means for their control without adverse effects on product quality. Important food safety concerns include illness from pathogenic microorganisms such as zoonotic animal pathogens, chemical contaminants, naturally occurring toxicants, and food additives. Specific food safety issues that have received scientific and regulatory attention, as well as publicity, in recent years include meat and poultry inspection activities such as performance- or risk-based inspection; decontamination of carcasses with thermal treatments or chemical rinses; nationwide microbiological baseline surveys for pathogens; humane treatment of animals; food irradiation; product cross-contamination; and control of pathogens such as *Escherichia coli* O157:H7, *Listeria monocytogenes*, *Salmonella* and *Campylo-*

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The Department of Animal Sciences is . . .

Your Brand in Animal Sciences

Join the Department of Animal Sciences and the College of Agricultural Sciences in celebration at the National Western Stock Show CSU Day, Saturday, Jan. 19, 2008. The 2007 Livestock Leader Presentation will be held in the Swift Room, Third Level of the Expo Hall, at the National Western Complex at 3:00 p.m. For more information on this and the many activities happening, contact Lucy Whitehead at (970) 491-3969 or lucy.whitehead@colostate.edu.

www.ansci.colostate.edu



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National Committee Formed to Address Spread of Iris Yellow Spot Virus and Onion Thrips

A recent Feature Article in *Plant Disease* (2006, Vol. 90:1468-1480) provides a thorough overview on these pests and challenges to the onion industry and pest management personnel. An article by D.H. Gent, L.J. du Toit, S.F. Fichtner, S.K. Mohan, H.R. Pappu, and H.F. Schwartz is entitled, "Iris Yellow Spot Virus: An Emerging Threat to Onion Bulb and Seed Production." A PDF copy of this paper and additional information on IYSV and thrips are available on the following website dedicated to information and resources on these pests: <http://www.alliumnet.com/index.htm>.

If the rate of spread and damage by iris yellow spot virus and onion thrips were to continue, projected economic impacts in the western United States alone could reach \$60 million (10 percent loss) to \$90 million (15 percent loss), in addition to environmental and economic costs due to additional pesticide sprays for thrips control (\$7.5 to \$12.5 million dollars for three to five additional sprays on 48,500 hectares per year). Iris yellow spot represents an immediate and serious threat to sustainable and productive onion cropping systems in the United States, and the recent detection of this disease in numerous onion-producing countries emphasizes the need to develop economically sound and effective IPM strategies. Development of ecologically based onion production systems that account for interactions of multiple pests, horticultural practices, and environmental concerns should be a long-term research priority to address threats to the onion industry from IYSV and the only known vector of this virus, *Thrips tabaci*, which is also a pest of onion.

Researchers have united in recent years in special sessions on IYSV and thrips at various meetings including the National Allium Research Conference held in 2004 at Grand Junction, Colo., and in 2006 at College Station, Texas. Highlights are posted at the following websites: <http://www.narc2004.org/> and <http://vic.tamu.edu/narc/index.htm>.

The U.S. onion research and extension community and industry are organizing a national committee through the land-grant university agricultural experiment stations that will facilitate collaboration and annual meetings of personnel from university, USDA/ARS, and other agencies with onion growers, processors, associations, crop consultants, and seed and agrichemical companies. The committee's title is Biology and Management of Iris Yellow Spot Virus (IYSV) and Thrips in Onions and will focus on the following objectives during 2007-2012. Officers for 2007-2008 were elected recently at a special



If the rate of spread and damage by iris yellow spot virus and onion thrips were to continue, projected economic impacts in the western United States alone could reach \$60 million (10 percent loss) to \$90 million (15 percent loss).

meeting in Denver, Colo.: Chair H. F. Schwartz at Colorado State University, Vice Chair Chris Cramer at New Mexico State University, and Secretary Stuart Reitz with USDA-ARS at Tallahassee, Fla. This committee is working closely with the National Onion Association (Wayne Mininger) and its state members to lobby the USDA/ARS and Congress for new research scientist positions and research dollars to USDA and university programs to address these ongoing pest and disease threats to the productivity and competitiveness of the onion industry in the United States.

Jan Leach Passes the Gavel



Ray D. Martyn, Jr., accepts the position of APS president, a position previously belonging to Jan Leach.

Jan Leach, University Distinguished Professor with the Department of Bioagricultural Sciences and Pest Management, passes the gavel to incoming APS President Ray D. Martyn, Jr., from the Department of Botany and Plant Pathology at Purdue University.

Jan, who is now serving as immediate past president, is quoted as saying, "I now have a whole new appreciation for the Office of President!"

CSU Offers Worker Protection Standard Train-the-Trainer Workshop

The CSU Environmental and Pesticide Education Program (CEPEP) is offering Worker Protection Standard (WPS) Train-the-Trainer Workshops. The workshop is specifically designed to help agricultural employers, managers, and supervisors meet WPS training standards. WPS applies where pesticides are used in production of agricultural plants for commercial or research purposes on farms, forests, nurseries, greenhouses, and related structures. It covers pesticide applicators, mixer/loaders, disposers of pesticide containers, and those who may be exposed to a pesticide residue on the job. Both general-use and restricted-use pesticide applications are covered by WPS.

The Train-the-Trainer Workshop trains and qualifies individuals to be trainers of field workers and pesticide handlers regarding pesticide safety. Training is essential for the proper use of pesticides and is key to the success of and compliance with WPS. To protect the health and safety of workers and handlers, employers are responsible for training them in the safe use of pesticides.

CEPEP designed the Train-the-Trainer Workshop to be both dynamic and interactive. The one-and-a-half day training offers a strong hands-on component. The training covers the Environmental Protection Agency's (EPA) required training topics for workers and handlers as defined by WPS. The workshop incorporates diverse types of learning activities to accommodate different reading proficiency and educational levels. EPA-approved training materials are provided.

To learn more about how to schedule or participate in a WPS Train-the-Trainer Workshop, please contact Sandra McDonald at (970) 491-6027 or sandra.mcdonald@colostate.edu.

This workshop is not WPS Compliance Assistance Training; it is only a WPS Trainer workshop. If you are interested in learning more about how to comply with WPS, please visit www.cepep.colostate.edu/wpsResources.htm. This site contains WPS fact sheets and links to federal, state, and private websites and other pesticide-related resources.



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Students Get Real-World Experience Through Flower Bed Design Competition at Centerra

Vibrant flower blooms at Centerra in Loveland, Colo., this summer reflected Colorado State University landscaping design and contracting students blossoming into their full potential.

Richly colored flower beds throughout the Centerra community are the result of the first student landscape design competition conducted at Centerra in cooperation with Colorado State and ValleyCrest Landscape Development.

The competition engaged five pairs of students. The winning design, by Meghan Oren and Chad Witney, was planted this spring by ValleyCrest, Centerra's contract landscape firm.

Beginning last fall, students experienced the entire bid process from start to finish. They created flower bed designs according to Centerra's design guidelines and budget, showed the client conceptual plans, received feedback, and gave a final presentation. The winners were chosen in December 2006, and the flower beds were planted in May 2007. Centerra is Northern Colorado's largest master-planned community at Interstate 25 and Highway 34.

"It's a great way to prepare our students to be successful after they graduate," said Zach Johnson, professor in the Landscape Design and Contracting Program. "It gives them realistic expectations of the professional world."

While flower annuals are planted at Centerra every year, this pilot program gave ValleyCrest a chance to try something new. Board members of the Centerra Commercial Owners Association (CCOA) selected Oren and Witney's design for its eye-catching appeal and ability to bring a "pop" to Centerra's main gateway entrances.

"We were excited to partner with CSU and ValleyCrest on a project that gives students hands-on experience in their field," said Kim Perry, vice president of community design for McWhinney. "The students were able to use their creativity to develop colorful and inviting flower bed patterns that stayed within the design parameters of our master-planned community."

Combinations of the annuals – petunias, marigolds, sunlight margarine daisy, salvias, lantana, celosia, and more – were planted in six highly visible locations.

The success of the competition can not only be seen with the flower beds themselves, but also in how the vital experience gained by the students has translated into new employment in Northern Colorado. ValleyCrest has hired Meghan Oren, and Chad Witney is now working at RHA in Boulder. In addition to their winning designs being implemented at Centerra, the two graduating seniors also won a cash prize and a two-day trip to ValleyCrest's corporate office in Callabasa, Calif.



One of six flower bed designs located at Centerra and designed by CSU students.

View the flower bed locations at Centerra:

- entrance at Highway 34 and Rocky Mountain Avenue
- roundabout at McWhinney Boulevard and Rocky Mountain Avenue
- entrance of the Rangeview Office Campus at Rocky Mountain Avenue
- roundabout at McWhinney Boulevard and Hahn's Peak Drive
- flower containers at The Marketplace at Centerra
- flower beds in front of Wells Fargo

A New Digital Collection Blossoms at CSU Libraries

During the first half of the twentieth century, Denver was known as the Carnation Capital of the World, and hundreds of Colorado growers shipped their beautiful flowers to destinations around the world. Although production waned in the mid-1970s due to increased competition from California and South America, the carnation industry remains a colorful piece of Colorado. This spring, CSU Libraries is proud to launch Carnations and the Floricultural Industry (<http://lib.colostate.edu/archives/agriculture/carnations/>), a brand new digital collection highlighting the industry from the 1950s through the 1970s. The website presents a wide array of digital materials including photographs, advertisements, scrapbooks, clippings, newsletters, and press releases that illuminate this once vibrant agribusiness.

Digitized from the records of the Colorado Flower Growers Association, the 519-item collection encompasses an array of topics for researchers, scholars, and students interested in advertising and publicity of Colorado carnations, the creation of a trademark, carnation cultivation, carnation care, carnation tinting and arrangement, activities pertaining to the Colorado Flower Growers Association, and relationships of the association with other organizations, companies, and individuals.

This collection was developed by the CSUL under a cooperative agreement with the Agriculture Network Information Center (AgNIC) and the support of Steve E. Newman from the CSU Department of Horticulture. The archival collection is part of the Colorado Agricultural Archive and is physically located in the Archives and Special Collections Department, Room 202 of Morgan Library. The Libraries hopes to expand the collection to include the research bulletins of the CFGA and is currently seeking funds to support future digitization.

Go to <http://lib.colostate.edu/archives/agriculture/carnations/> to search and view these materials. Contact Linda Meyer for more information at (970) 491-1844 or linda.meyer@colostate.edu.

Horticulture Club/Richard Reale Scholarship Reaches Full Endowment

It is official! The endowment for the Horticulture Club/Richard Reale Scholarship is complete as of mid-June. The Horticulture Club initiated the endowment five years ago with a goal of a \$20,000 endowment to fund the scholarship. The scholarship originally was started 27 years ago to honor a former horticulture student who died in an accident weeks before graduation. Richard Reale was that student who had become active in the Horticulture Club during the last few years of his academic career. He was an outstanding student who maintained a 3.9 GPA while working and participating in the club.

The scholarship was funded by the Reale family and friends for the first five years. The Horticulture Club took over the funding of the scholarship and has supported it on an annual basis for the last 22 years. The scholarship is given to an outstanding student who has demonstrated both academic success as well as made significant contributions to the Horticulture Club and the Department of Horticulture and Landscape Architecture.

The endowment has been funded primarily through funds generated from the Horticulture Club's annual spring sales of bedding plants and fall fruit sales. There have also been substantial contributions from former students and faculty to support the endowment.

Thanks to all Horticulture Club students who contributed time and energy in generating the endowment funds and to all who made donations. Future recipients will appreciate all you have done.

Landscape Horticulture Alumnus in Golf Hall of Fame

In 1963, Jay Morrish was awarded the first Trans-Mississippi Scholarship at CSU, which helped him complete studies that led to a stellar international career in golf course design and construction, culminating with his induction into the Colorado Golf Hall of Fame in September of this year.

Following graduation from the department with a degree in landscape horticulture, Jay taught horticulture courses at CSU and then launched his career as a construction superintendent for Robert Trent Jones at Spyglass Hill. He worked with Jack Nicklaus for 10 years, which included the design and construction of Castle Pines, and spent 12 years in partnership with another professional golf icon, Tom Weiskopf.

(continued on Page 11)



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Mary Stromberger Promoted



Mary Stromberger, who has been a soil and crop science faculty member since 2001, was recently promoted to the rank of associate professor with tenure.

Mary conducts research to determine the response of soil microbial communities to environmental disturbances and changes in land use management. She focuses on the relationships between microbial community composition and functional

diversity in order to better predict how environmental changes will affect terrestrial ecosystem processes that are regulated by soil microorganisms. Some of her recent projects include monitoring the recovery of soil microorganisms following forest fires; characterizing rhizosphere microbial communities and their biochemical activities in deficit-irrigated soils; and identifying the effects of land-applied biosolids on soil microbial communities, arbuscular mycorrhizal fungi, and antibiotic resistance patterns of indigenous soil microorganisms.

Mary teaches undergraduate and graduate courses in soil microbiology, soil ecology, and environmental soil science. She has mentored four graduate students, five undergraduate students, and has served on 19 graduate committees from departments across campus.

She is married to John Stromberger, and they have a 2-year-old son named Jacob.

Celebrating 30 Years of Service



Carolyn Schultz retired at the end of May 2007, celebrating 30 years of service to the Department of Soil and Crop Sciences. Her retirement luncheon on May 25 was a great success with a wonderful turnout of students, staff, and faculty from all over campus whose lives have

been touched by working with her over the years.

As a special thank you, the department presented her with an all-expense-paid trip to New Orleans to attend the Tri-Society meetings this November. Since this is the centennial year for ASA, it will be a great opportunity for her to meet lots of former students who have passed through our halls, in addition to experiencing all the food, music, and history of New Orleans.

Introducing Allan Andales

Allan Andales recently joined our faculty as an assistant professor of irrigation and water science.

Allan's research will quantify the effects of alternative irrigation and water management strategies on soil-plant-atmosphere systems. Possible strategies to be considered include irrigation method, crop or plant selection to match water availability, limited irrigation, planting density, reduced tillage, and crop residue management. Research findings will be used to develop best management practices for conserving water in agricultural fields and urban landscapes in Colorado. Both water quantity and water quality (such as nitrate leaching and salinity) aspects of irrigation will be considered. Computer simulation models of soil-plant-atmosphere systems will be used to extend site-specific research findings to other locations, management practices, or climate scenarios.

Allan will also be involved in extension activities related to irrigation and water management. He will be teaching irrigation principles and management.

Allan and his wife, Jane, have two sons: David (age 11) and Daniel (age 8).



Seventh Annual Honor Alumni Award

This year's Honor Alumni – Col. Gordon H. Simmons, Donna Norwood Souther, and Kenneth P. Vogel – were named on Sept. 7. This award was established through a gift given by Wayne and Joyce Keim. Each awardee was presented with a commemorative barometer, and their names were added to the perpetual plaque, which hangs in the Main Office.



Col. Gordon H. Simmons is retired and living in the same house in Missoula, Mont., where his five children were born and raised. He had a very distinguished military career, serving in both World War II and the Korean War. He also spent 25 years on the Missoula, Mont., school board. He is a native of Sheridan, Wyo., and earned his B.S. from CSU in 1943.

Donna Norwood Souther is chief academic officer and executive dean at Aims Community College in Greeley, Colo. She grew up in Julesburg, Colo., and graduated from Julesburg High. She earned her B.S. from CSU in 1980, her J.D. from the University of Colorado School of Law in 1984, and her M.A. from University of Northern Colorado in 1999 in human communication.



Ken Vogel and Donna Souther

Kenneth P. Vogel is a research geneticist and research leader with the Agricultural Research Service USDA and is an adjunct professor of agronomy and horticulture at the University of Nebraska in Lincoln. He is a native of western Nebraska and received his B.S. and M.S. from CSU in 1965 and 1967 and earned his Ph.D. from the University of Nebraska.

From the Desk of Dr. Peterson

We are back to school! Somehow the summer ended very early and the fall semester was upon us quickly. It's great to see the bustling hallways and the enthusiasm that always marks the beginning of classes at CSU.

We need your alumni updates! Please update us on your life's activities and tell your college friends what you have been doing. We will post your stories on our department website; this is a great way to reconnect with your classmates from years back. E-mail your story to Lorraine Voss at lorraine.voss@colostate.edu or mail a hardcopy to the Department of Soil and Crop Sciences.

As you will read in this issue of *Ag family*, we have just named our 2007 Honor Alumni. These folks have truly distinguished themselves and have brought great honor to our department. They are a sample of the great students who have gone through our halls. We thank Wayne and Joyce Keim, who instigated and endowed the Honor Alumni Award in 2001. These awards are truly an annual department highlight.

By the time you receive this issue of *Ag family*, our annual alumni reunion, which is held in conjunction with Ag Day, will be history. Start planning now to join us in 2008 at our next alumni reunion. We would like to have the opportunity to greet you in person and get caught up on what you are doing these days.

We thank you for your continued financial support of the Department of Soil and Crop Sciences. Many of you send cash gifts to the department annually, and they are greatly appreciated. Since Jan. 1, you have given more than \$12,700 to our department for scholarships, assistantships, and general department use. The gifts given to our general department use are especially important and helpful because they allow us to do the extras for students and faculty. Thank you!



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New Wheat Variety Released by Colorado State Named After Longtime Plant Pathologist

A new high-yielding and stress-tolerant variety of hard red winter wheat developed by the Colorado State University Agricultural Experiment Station has been released to seed producers in Colorado. Named “Bill Brown” in tribute to a longtime Colorado State professor and Extension plant pathologist who passed away in 2003, the new variety has shown high yields in Colorado and excellent defense from both leaf and stripe rust.



William “Bill” M. Brown, who joined Colorado State in 1980, devoted his career to the improvement and management of disease of wheat and other grain crops, including leaf and stripe rusts. He was a charismatic and upbeat individual and an internationally recognized and highly respected researcher, according to his colleagues. Among several other leadership positions, Brown served as an international extension coordinator and faculty advisor for the Peace Corps. He also had a witty sense of humor and an affinity for jazz. The annually awarded William E. Brown Jr. Memorial Scholarship was established in 2003.

“Bill was the kind of person who could fill up a room and make everyone happy,” said Tom Holtzer, head of Colorado State’s Department of

Bioagricultural and Sciences and Pest Management. “He was a tremendous researcher and an excellent, engaging teacher.”

In several years of field testing throughout eastern Colorado, the Bill Brown wheat variety has shown exceptional yield under both nonirrigated and irrigated conditions, very high test weights, and good milling and baking qualities, said Colorado State wheat breeder Scott Haley. Haley leads a team of researchers, including Extension entomologist Frank Peairs and Extension agronomist Jerry Johnson, which focus on improving wheat varieties for Colorado’s farmers.

“Bill Brown has been a top-yielder over a three-year average in the dryland trials, essentially equivalent to the high-yielding variety Hatcher,” Haley said. “That included two very drought-stressed years in 2005 and 2006. Bill Brown has also topped our irrigated trials and has the potential to be the standard for irrigated wheat growers.”

It took 10 years to develop Bill Brown, Haley said, with the first cross-breeding taking place in 1997. Colorado State’s wheat breeding program has established itself as a dependable developer of new, productive wheat varieties for Colorado growers. In 2007, about half of all wheat acreage in Colorado was planted to varieties developed by Colorado State.

In an agreement between Colorado State, the Colorado Wheat Research Foundation, or CWRF, and the Colorado Seed Growers Association, ownership and marketing rights of Bill Brown will be offered to the CWRF. Bill Brown may be grown and sold only as a class of certified seed by Colorado Seed Growers Association members licensed



by the Colorado Wheat Research Foundation. The foundation will obtain a certificate of plant variety protection for these new varieties under the federal Plant Variety Protection Act. Royalties paid to the foundation by certified seed growers from the sale of these varieties is returned to Colorado State to support continued wheat research and variety development.

AES Assisting Biodiesel Research Through Crop Testing

The momentum for sunflowers as an alternative-energy source continues to blossom following the groundbreaking of the San Juan Biodiesel production facility in Dove Creek, Colo. Area farmers continue to examine the replacement of existing crops with the sunflowers that produce higher content of oil seed.



Colorado State University has assisted the development of the Dove Creek facility since October 2004. Twenty miles from Dove Creek, the University has retooled its planting program at its research center in Yellow Jacket, Colo., in 2005 to include sunflower-variety testing for yield and oil seed quality.

In 2006, 2,660 acres of sunflowers were harvested with 20 growers participating. In 2007, that figure swelled to 10,600 acres planted with 41 growers participating. San Juan Biodiesel has surpassed its 90 percent mark in raising the finances to construct the facility and purchase this year’s crop. Construction will begin this fall.

With the assistance of Dan Fernandez, Dolores County Extension director, a series of public meetings and workshops were held for government agencies, fenders, legislators, interested growers, and the general public to explain the project and build momentum.

Colorado State has a rich history of research programs that have generated agricultural innovations in the areas surrounding Dove Creek. The Southwestern Colorado Research Center collects data that will enhance the conversion of dryland farms to irrigated farms.

Research concentrates on the selection of appropriate irrigation systems, irrigation water management, fertilization requirements, crop varieties, and cultural practices. Experimentation has included both surface and sprinkler irrigation techniques.

SWCRC also evaluates alternative crops to identify adapted varieties, determine markets, and develop best management practices. Oil seed crops and legumes have been evaluated at SWCRC. CSU faculty and graduate students provide help in conducting collaborative research and demonstration projects.

The Agricultural Experiment Station conducts research that addresses the economic viability, environmental sustainability, and social acceptability of activities impacting agriculture, natural resources, and consumers in Colorado. Out of 10 sites that conduct research to meet agricultural production needs in different regions of the state, there is probably one near you!

Visit www.colostate.edu/Depts/AES to find locations and types of research done at each site.



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Colorado State Announces New Director of Extension



Deborah Young is the associate provost and director of Colorado State University Extension. Deborah earned a bachelor of arts in biology and Spanish from Indiana University and Universidad Iberoamericana in Mexico City. She has an M.S. and a Ph.D. in plant pathology, both from the University of Arizona. She was an extension agent in Cochise County, Ariz., a county extension director in Yavapai County, Ariz., and an extension specialist in plant pathology and associate director of statewide programs.

“Dr. Young has been a county agent, a strong advocate for Arizona Extension, and an associate director,” said Lou Swanson, vice provost for outreach and strategic partnerships at Colorado State. “I feel she will communicate well with all associated with Colorado State Extension, our county and state stakeholders and supporters, and with a broad spectrum of on-campus faculty and administrators.”

Young has extensive experience in supporting and promoting sustainable agriculture and has authored numerous articles and made several presentations on sustainable agriculture while working in Arizona.

New Look!

The needs of people change, but their need for accurate information, education, and training to improve their lives does not. Critical challenges facing Colorado today include population growth and land development; scarcity of water; and redeveloping thriving rural communities to maintain this valued Colorado lifestyle. Leadership in renewable energy is one approach to economic and community development. Colorado’s future is dependent on providing healthy lifestyles for Colorado youth that include safety, excellent education leading to job security, and responsible choices.

Deborah Young, the new Colorado State University Extension director, emphasizes the two-way street that Colorado State Extension’s 59 offices offer the citizens of Colorado.

“I believe Colorado State University has the potential to reach the people of the state in not only Extension’s traditional strengths but also through new and innovative outreach programs,” Young said. “Colorado State Extension can reach through its county offices to provide educational opportunities at all levels, and Coloradans can reach back to the University through those same offices.”

With new leadership and new challenges, CSU Extension has chosen an exciting new look and a new, shorter, easier name. When anyone needs information in any area of everyday life, they just have to think “Extension” and “Colorado State.”

“We are as cooperative as ever – in fact, our partnerships reach so far and wide, it is really assumed that we are working with literally hundreds of organizations statewide and nationally,” said Meg Wilson, director of community relations for Colorado State Extension.

“Public service has been our only mission for 95 years,” Wilson added. “We are all about extending the University, extending the public’s connection and input to the University, and extending community resources throughout the state.”

Think Extension; think Colorado State University!

Colorado State University

Extension

Sunny Days Summit

Extension Bolsters Renewable Energy in Eastern Colorado Communities

Sunny Days, the Northeast Colorado Alternative Energy Summit held Aug. 21 in Akron, Colo., brought together more than 125 producers, investors, legislators, and business owners. The summit focused on the enormous potential for renewable energy to revitalize the economy and communities on the Eastern Plains.

Dennis Kaan, Colorado State University Extension Golden Plains Area director and co-organizer of the summit, explained their goals.

“At the end of the day, agricultural producers, lenders, businesses manufacturers, and venture capitalists will have an understanding of the current renewable energy market in northeastern Colorado and have an idea how they can participate in this market,” Kaan said.

The Sunny Days event was a direct result of the national conference, Renewable Energy Options: The Role of Extension Agents in the 21st Century Energy Economy, hosted by Colorado State Extension last March in Denver. The Golden Plains Area took the initiative to create the summit and played a key role.

Extension weed, livestock, and water management specialists reported the latest field research. Featured speakers from the Colorado Office of Energy Management and National Renewable Energy Laboratory in Golden, Colo., discussed policy and outlook in wind and solar technologies. Extension partners with many of the groups that presented, providing expertise, educational resources, and connections to communities across the state.

Local renewable energy producers also shared their stories and strategies.

Producers Gary and Laura Teague are implementing an anaerobic biodigester system as part of their livestock operations, Teague Diversified, Inc.,

near Fort Morgan, Colo. The Teagues are among a group of farmers nationwide who are on the leading edge of developing business models that incorporate renewable energy.

“It’s evolving technology, and we’re continuing to evolve with it,” Gary Teague said.

He added they expect to have one of the nation’s largest biodigesters on line within 18 months. In this process, they have often turned to Colorado State Extension for assistance.

“We rely on Extension for a lot of different things within our livestock operations – from our nutritional data all the way up to different alternative management plans,” Teague said.

Revitalizing communities in the region was also a central theme at the Sunny Days summit.

State Rep. Jerry Sonnenberg said during the bipartisan legislative panel discussion that he believes “agricultural success is community success” and that investing in new technologies and diversifying agricultural businesses are crucial to revitalizing and stabilizing the economy.

In addition to the direct economic benefit the renewable energy boom can bring, many of those at the conference see opportunities for community growth. “We have to capture the imagination and offer exciting new things for young families to bring them to the region. We need to replace the lost value of agriculture with new developments,” said State Rep. Cory Gardner.

Community leaders, including Extension, are focusing on the challenge of attracting young people back into agriculture and to the small towns of the region. Growth of solar, wind, and alternative fuels in eastern Colorado holds promise for these communities, and families like the Teagues are proof of the possibilities.

Highlights from the summit can be found at <http://goldenplains.colostate.edu>. – *Jamie Folsom*



Micah Allen of iCAST demonstrates making biodiesel from oilseeds. Extension partners with iCAST to develop small-scale biodiesel and other value-added farm projects.



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Generations, continued from Page 1

Bonnie also have seven grandchildren who are all beginning their own livestock herds. In an irrigated valley like Sterling, it is necessary to be diversified in both ranching and farming to keep the operation sustainable, and every person needs to do whatever it takes to get all tasks done. Ken notices that it is a unique situation in this day and age.

“I’ve seen people change jobs three to four times. It’s unique to be farming with your father, and now I’m also farming with my son-in-law. We’re friends and we’re business partners. The cattle business is a bond we share with our families.”

Although the “family farm” concept may be becoming more unique, it’s a concept that Colorado State University and agricultural schools throughout the state are still focusing on. The College of Agricultural Sciences strives to provide students with the knowledge and hands-on learning to return to their family’s operation and enhance it even more amidst the changing culture of 21st-century agriculture.

Irrigated Agriculture, continued from Page 4

In the third column of Table 1, the direct, indirect, and induced activity has been summed and then averaged for each acre of the regions’ cropland. The lowest value is found in the Arkansas at \$428 per acre, and the highest is in the Rio Grande at \$1,127 per acre. The crop mix describes, in part, the difference. The primary crop in the Rio Grande (in terms of its value) is potatoes, a high-value crop that requires significant inputs to be grown and is exported almost exclusively out of the region. Forage crops are typical in the Arkansas, and these perennial require relatively fewer inputs. In addition, much of the forages used in the Arkansas Valley are used locally.

So when is economic activity high? When high-value crops are sold outside the region, when revenues from the crop sales are spent on locally produced inputs, and when local support industries use local labor and inputs.

What about limited irrigation versus ‘buy and dry’ of irrigated land?

Limited irrigation is better for the regional economy when compared to fallowing or converting large swaths of land to dryland cropping. Simply put, limited irrigation provides greater direct, indirect, and induced economic activity. While not as large as the economic activity shown under full irrigation in Table 1, the economic activity generated by limited irrigation is greater than that for dryland cropping.

The economic activity in Table 1 is a snapshot of irrigated agriculture’s contribution today, but it cannot be interpreted as “lost” economic activity as water leaves agriculture. As an example, we would expect farms to adapt and improvise when confronted with a limited water situation – that is, they might convert to dryland cropping or rangeland. Likewise, agribusiness may innovate – it’s common for wholesalers (such as cooperatives) to provide more small-acreage services as large agriculture shifts out of the region. Of course, this is more viable near larger urban areas than those that are more distant.

This table does not address distributional effects, two in particular. First, if the irrigated acres that are fallowed happen to be clustered (which is likely given legal transactions costs), the economic consequences will be localized and severe, even though they appear to be smaller when viewed at a regional scale. In addition, the effects will be more intense for particular businesses that are solely designed to support irrigated agriculture and individuals whose work skills cannot be shifted from agriculture to other industries.

Finally, the economy’s tipping points aren’t represented in Table 1 – that is, a critical mass is needed to support businesses in rural economies. If revenues slide below the tipping point, then businesses may closed down in spite of efforts to shift to other revenue streams. Also not included in the analysis are lost property taxes, which may be severe given the large difference between assessed values of irrigated vs. dryland.

– James Pritchett (pritchet@lamar.colostate.edu), Department of Agriculture and Resource Economics, Colorado State University

CSU Supercluster, continued from Page 5

bacter. The expertise available at the Food Safety Cluster, as part of the Center for Meat Safety and Quality (CMSQ) in the Department of Animal Sciences, as well as faculty from other departments at Colorado State University, can be directed toward addressing global issues and providing knowledge that can contribute to their solutions. This multidisciplinary group of scientists fulfills the goal of the Food Safety Cluster, which is to address national and global food safety issues by focusing on research, development, and delivery – where “delivery” includes publication of research results plus transfer of technology. The center and the cluster at Colorado State University are uniquely positioned, staffed, and equipped to respond, rapidly and competently, to food and meat safety and quality issues.

For more information, visit www.ansci.colostate.edu.

Meat Science Program, continued from Page 5

The Meat Science Program in the Department of Animal Sciences is extremely visible because of the widespread participation of its graduate students in scientific and industry meetings and the amount of field work entailed in some of the research activities conducted by the Meat Science Program. Currently, the Meat Science Program with its CMSQ and the Food Safety Cluster, as part of the University Infectious Diseases Super Cluster, collaborates with faculty from other colleges at CSU such as Applied Human Sciences and Veterinary Medicine and Biomedical Sciences.

Major Accomplishments of the Meat Science Group

1. Completion and promulgation of National and International Beef and Pork and National Market Cow and Bull Quality Audits and National Cattle Injection-Site Lesion Audits.
2. Pioneering the development and teaching of HACCP short courses to all the beef suppliers of a major fast-food chain before HACCP became a regulatory requirement.
3. Research on feeder cattle of different frame sizes and amounts of muscling and on impact of growth promotants on beef quality.
4. Development of beef Palatability Assurance Critical Control Points.
5. Development of a fluorescent immunologic assay for detection of marker for BSE-specified risk materials.
6. Research on instrument evaluations of tenderness, quality, and yield grades and incorporation of instrument grading usage by USDA.
7. Development of carcass decontamination interventions and pioneering of the Multiple Hurdle Decontamination concept.
8. Research on antimicrobial alternatives for preventing/reducing survival/growth of *Listeria monocytogenes* in ready-to-eat meat products, as required by new regulations.
9. Citing research data in regulatory directives and guidance documents such as in the approval of steam-vacuuming for contamination reduction on beef carcasses and control of pathogens in ready-to-eat meat products including jerky and luncheon meats.
10. Contributions in reopening the Japanese beef export market and in the vast increase of beef exports to Egypt.

Golf Hall of Fame, continued from Page 7

Morrish and Weiskopf, who collaborated on 26 courses, were named Architects of the Year in 1995 and received tremendous acclaim for their innovative works, notable throughout the golf world for including “reachable par fours.” They were the first American designers to design a course in Scotland, which is Loch Lomond, among the top 20 in world rankings. Weiskopf said that “no one out-works or out-thinks Jay,” while Nicklaus noted that Jay is “one of the best technicians in the business.”

Many of Jay’s golf course designs are in Colorado, including Country Club of the Rockies (with Nicklaus), Singletree (with Bob Cupp), River Valley Ranch, Vista Ridge, Blackstone, Golf Club at Ravenna, and Castle Pines Golf Club (with Nicklaus). Jay claims that Ravenna, which is below Chatfield Reservoir, is his last such project, but is “finding it harder than I thought to walk away.”

Since 1995, Jay has worked in partnership with his son and was elected president of the American Society for Golf Course Architects for 2002-2003. In addition to golf, his interests and passions include big game hunting, especially in Africa, as evident from the trophy room in his home in Flower Mound, Texas.

Alumni Updates

Jay Morrish, '64 Landscape Horticulture

Jay Morrish was recently inducted into the Colorado Golf Hall of Fame for 2007. Jay is an award-winning golf course architect who resides in Texas with his family.

Richard Walter, '49 Animal Sciences

Richard Walter is not only an animal sciences alumnus, but also was a professor at Colorado State University, retiring in 2002. Richard and his wife, Verda, have retired to a home on the edge of the desert near Tucson, Ariz.

Do You Have an Alumni Update?

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