COLLEGE OF AGRICULTURAL SCIENCES
AG family
Colorado State University
Fall 2008

# Raising Ram Fans – The Blach Family Legacy



Summer 1977. Freshmen orientation is ending, and President A.R. Chamberlain is speaking to the students and parents in attendance. At the end of his speech, Chamberlain points to a cake specially made for one of the attendees: Teresa Blach has just finished her ninth and final orientation session with her ninth child.

The Blach family legacy started at Colorado A & M in 1942 with Perry Blach from Yuma, Colo. "I grew up on a farm and was interested in agriculture and livestock, particularly cattle," he says. Blach studied agricultural sciences and played football under Coach Harry Hughes. Blach left A & M during WWII but returned to complete his studies (and play more football) where he played alongside the likes of Jack Christensen, Thurman "Fum" McGraw, and John Mosley. Blach also was a member of Sigma Phi Epsilon fraternity and Livestock Club and served on student council, including sophomore class president.

In 1948, Blach graduated, married Teresa, and moved back to Yuma for farming. A descendant of Austrian immigrants and farmers, Blach started and still owns Perry J. Blach Farm and Ranch, a cattle operation.

In the past 60 years, Blach has been an integral part of this University in many ways: football season ticket holder, member of the Alumni Association board of directors (including president from 1963-1965), lifetime member of the Alumni Association, member of several different collegiate councils, advisor to the CSU Foundation, winner of the Distinguished Alumni Henry Award, and parent and grandparent of numerous CSU alumni.

Here are just a few of the many stories of the Blach family:

**Tom Blach (attended, '68-'71)** is second in the line of nine Blach children. He studied animal science and was a member of the Livestock Club, the Livestock Judging Team, and the Meats Team. "When I went to school, we were required to take swimming. The coach told us to jump in and swim to the other side of the pool. Well, growing up in Yuma, I had never seen so much water, let alone swim in it. I jumped in the water, stood up, and the coach fished me out," recalls Tom. "But I did learn to swim."

*Perry and Teresa Blach (center), pictured with their children on Perry's 85th birthday.*

Tom's wife, Brenda, also attended CSU, and their two sons, Justin ('95) and Jaden ('97), moved back to Yuma after graduation, and the family now owns a cow/calf operation and a dirt contracting business.

**Patty Metzler (attended, '70 -'73)**, the third child in line, inherited her father's athletic ability. Patty's daughter, Hannah, shares the story of how her mom got recruited for the women's softball team. "Mom's P.E. teacher was also the softball coach. One day, when the class was playing softball, the teacher said, 'You're coming to tryouts.' She pitched for the women's softball team for three years."

*(continued on Page 11)*

# Exciting Times: Past, Present, and Future

## *A Message From the Interim Dean*

It is my pleasure to welcome you to the Fall 2008 edition of the *AG family* newsletter and to serve as your interim dean while we conduct a national search for a permanent dean. Associate Dean for Academic Programs, Nancy Irlbeck, and I have worked together for the past several years on a variety of College activities and programs, so I am confident that this year of transition in leadership will be productive and stable for our students, faculty, and staff. I can assure you that I will devote my energies to continue the enhancement of our College's teaching, research, and outreach initiatives.

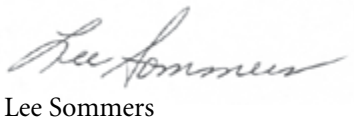
I want to take this opportunity to extend a sincere thank you to Dean Marc Johnson who, on June 1, 2008, accepted the position of executive vice president and provost at the University of Nevada-Reno. Dr. Johnson provided excellent leadership to our College for a five-year period and we wish him well in his new position. Doug Mayo, who served as our director of development since 2005, accepted a position as vice president of advancement at Minnesota State University-Mankato. While it is always sad to lose excellent leaders, it is also a tribute to the quality of individuals who were hired. It is our goal to recruit the best candidates for these positions.

Preliminary estimates on enrollment for the Fall 2008 semester indicates that Colorado State University and the College continue to be the "College of Choice" for Colorado students. Overall, Colorado State has enrolled a record number of students with about 21,000 undergraduate and 5,000 graduate students. Enrollment in the College of Agricultural Sciences increased to about 1,200 undergraduates and 200 graduate students. Our majors with the highest enrollments are in the Departments of Equine Sciences, Animal Sciences, Horticulture, and Ag Business.

The research programs in the College are also thriving. As described in this issue, two programs have been identified by the University as Programs of Research and Scholarly Excellence. Both of these programs are multidisciplinary and involve internationally recognized faculty in two or more colleges whose activities also provide significant benefits to Colorado agriculture.

While innovation drives our progress, it's tradition that guides our people. Together, we are wholly invested in a robust future for agriculture through education, research, and extension. Our alumni and friends have consistently shown ongoing financial support through donations to our College programs and scholarships. Faculty and staff interact warmly with students and offer their best to their colleagues. This is the place where students launch their careers, engage in new learning, and forge lifelong relationships. We're the host of all kinds of wonderful connections and heartwarming stories.

I'm especially interested in your thoughts as we work together to improve and advance the status of agriculture in Colorado and beyond. As always, we welcome alumni and friends to campus anytime – whether it be for a special event or just to visit and meet with a favorite professor. Please send your ideas, alumni stories, and comments to our special VIP e-mail, CAS_VIP@mail.colostate.edu. We look forward to hearing from you.



Lee Sommers
Interim Dean, College of Agricultural Sciences
Director, Agricultural Experiment Station

Institute for Livestock and the Environment

# ILE Bridges Gaps, Strengthens Rural Communities

The Institute for Livestock and the Environment is focused on solving problems at the interface of livestock production and science-based environmental management. Faculty from various disciplines across the Colorado State University campus have joined together to provide an integrated program of research, teaching, and extension. This requires balancing the economics of the livestock industry with continued environmental protection – critical components to achieving sustainable rural communities.

The institute has four objectives: assess the environmental, economic, and social impacts of livestock production; evaluate and develop management practices and tools to promote economically and environmentally viable livestock production; gather information on public and livestock producer support of management practices; and advise producers and inform policy makers.

*The ILE works to cultivate the critical relationship between livestock and environment both locally in Colorado, nationally, and on a global scale.*

The institute is directed by Jessica Davis, professor of soil science and extension specialist at Colorado State University. "This is a critical time for CSU to support the livestock industry in their efforts to minimize environmental risks," says Davis. "By working together both within CSU and along with producers and policy makers, our ability to solve real-world problems is magnified."

Four interdisciplinary teams specializing in water quality, air quality, pathogens, and pharmaceuticals are addressing a cross-section of issues from land conservation to environmental practices and energy issues related to livestock production.

*Jessica Davis, professor of soil science and extension specialist at CSU, directs the ILE and its core team, whose role is to determine the direction of the ILE.*

The teams include faculty from Extension and the departments of Animal Sciences; Soil and Crop Sciences; Sociology; Agricultural and Resource Economics; Civil Engineering; Clinical Sciences; Atmospheric Science; Environmental and Radiological Health Sciences; and Forest, Rangeland, and Watershed Stewardship.

Transfer of new technologies and research will be expedited through stakeholder and extension partners, providing direct avenues for communication with both livestock producers and policy makers. In addition, frequent, focused communication with stakeholders and livestock producers will create broader public awareness of strengths in the area of animal agriculture and producer practices.

Knowledge gained from field research also will transfer to the classroom. Growth of our international research program will broaden student exposure to the global challenge of sustainable animal agriculture through incorporation of international examples into the courses we teach. As the ILE grows, graduate programs will be strengthened to meet these pressing societal issues through increased interdisciplinary training and exposure and increased graduate research assistantships.

For more information on the Institute for Livestock and the Environment, visit the website at www.livestockandenvironment.info or contact Katherine Sánchez Meador, at (970) 491-2326 or Katherine.Sanchez_Meador@colostate.edu.

## Two Programs Receive Award for Distinction, Standards of Excellence

Initiated in 1991, the Programs of Research and Scholarly Excellence at Colorado State University have designated specific programs universitywide that have achieved great distinction and have set a standard for excellence that may serve as a model for programs throughout the institution. Programs are selected through an extensive nomination and review process that takes place every four years.

This past spring, two of the programs in the College of Agricultural Sciences were designated as a Program of Research and Scholarly Excellence, and will receive supplemental funding from the University for graduate student and program support. The two PRSEs in the College are the Center for Meat Safety and Quality and the Wheat Research, Outreach, and Education Program. Both programs are multidisciplinary and involve faculty from the College of Agricultural Sciences as well as the College of Applied Human Sciences.

The Center for Meat Safety and Quality is directed by John N. Sofos, professor of animal sciences and University Distinguished Professor. The center is an international leader in developing new processing methods and treatments to reduce *E. coli* O157:H7 in meat products as well as treatments to prevent contamination of meat with *Listeria* and *Salmonella*. The goals of the center are to study the behavior of pathogenic bacteria, reduce the incidence of foodborne illness, study the molecular ecology and transmission dynamics, develop techniques and biosensors for rapid detection, improve methodology for detection of Bovine Spongiform Encephalopathy, examine animal identification and traceability systems, and develop science-based strategies to ensure exports. Faculty involved in the center have garnered more than $10 million of external funding over the past five years.

The Wheat Research, Outreach and Education Program is co-directed by Thomas Holtzer, head of the Department of Bioagricultural Sciences and Pest Management, and Gary Peterson, head of the Department of Soil and Crop Sciences. The wheat program looks to develop new wheat varieties with yield potential, improved baking qualities, stress tolerance to heat and drought, and pest resistance; enhance wheat production systems primarily under dryland conditions; and assess the human health implications of wheat-based diets. Adoption of the technology produced by the wheat program is shown in new wheat varieties developed at Colorado State that are now grown on about 60 percent of Colorado's wheat acres. It is estimated that the improved yield and quality of the CSU wheat varieties increases the value to Colorado wheat producers in excess of $20 million per year. This program receives significant external funding from federal grants (more than $14 million in five years) with a significant portion originating from the wheat industry in Colorado through the Colorado Wheat Administrative Committee and the Colorado Wheat Research Foundation.

## CARL Program Develops, Cultivates Emerging Leaders

The Colorado Agriculture and Rural Leadership program develops and enhances the leadership capabilities of men and women with diverse backgrounds who are committed to the future of Colorado's agriculture and rural communities. CARL is a hands-on, interactive program dedicated to producing graduates with the vision and commitment to lead change and ensure the sustainability of Colorado's agricultural economies and rural communities.

CARL and its supporters recruit members committed to agriculture and rural Colorado and who are recognized as emerging leaders directly involved in agriculture, agribusiness, rural industries, rural communities, or natural resource management. For each two-year class, CARL has space for approximately 20 members. Individuals can request applications directly from CARL or may be nominated by others.

To apply, visit the CARL program website at www.agsci.colostate.edu/carl/carl.html or call (970) 491-8669 for more information. The application deadline for the next CARL class is December 1. This class will begin in Spring 2009. To support this program, contact the College of Agricultural Sciences Development office at (970) 491-0909 or CAS_VIP@colostate.edu.

## 11th Annual Photography Contest

What better way to show your appreciation for Colorado's beauty than to share it with others? The Colorado Department of Agriculture's annual photography contest provides one of the best opportunities for exactly this.

All entries must relate to Colorado agriculture in some way. Entries representing all types of agricultural enterprises, scenes, and people are encouraged. Prizes will be awarded in four subject areas: people, livestock, crops, and agritourism.

Log on to the CDA website, www.colorado.gov/ag, for more information.

# Protect Your Financial Future

*by Bill Sheets, Colorado State University Office of Gift Planning*

*Bill Sheets is assisting the College of Agricultural Sciences' Development Office while the director of development search is ongoing. His extensive experience in both the field of development and the agricultural industry will help further the College's initiatives.*

Helping others is as American as apple pie, and each year, millions of U.S. citizens make donations, typically cash and stocks, to support favorite charities. Both options are popular, and both receive a lot of attention. But is making a gift of such liquid assets the best option for every charitable giving situation?

Many people, especially those who are at or near retirement age, are finding that charitable gift annuities are a better financial fit.

With a CGA, you make a gift of cash, stocks or bonds, or other assets to the Colorado State University Foundation for the benefit of the College of Agricultural Sciences, and in return, we give you and a second person (if you choose) fixed payments for life.

## A Full Package of Benefits

A charitable gift annuity also offers:

- the ability to meet your philanthropic goals while receiving regular payments.
- an immediate income tax deduction, plus capital gains tax savings if the gift is made with appreciated assets owned for longer than one year.
- an annuity rate that may be higher than what your current investments offer, including certificates of deposit.
- the assurance that the second beneficiary can count on the CGA for financial stability.

CGA payment rates are based on the ages of the beneficiaries at the time payments begin.

Most U.S. charitable organizations follow rates that are suggested by the American Council on Gift Annuities.

Please call Marianne Blackwell at (970) 491-7862 or (866) CSU-GIVE or e-mail us at mblackwell@ua.colostate.edu for more information.

## The Older You Are, the Higher Your Annuity Rate

| Age | Annuity Rate | Gift Amount | Annual Payment | Income Tax-Free Amount* | Charitable Income Tax Deduction** |
|---|---|---|---|---|---|
| **60** | 5.5% | $10,000 | $550 | $322 | $2,233 |
| **65** | 5.7% | $10,000 | $570 | $353 | $2,981 |
| **70** | 6.1% | $10,000 | $610 | $401 | $3,615 |
| **75** | 6.7% | $10,000 | $670 | $468 | $4,197 |
| **80** | 7.6% | $10,000 | $760 | $559 | $4,746 |
| **85** | 8.9% | $10,000 | $890 | $699 | $5,251 |
| **90+** | 10.5% | $10,000 | $1,050 | $854 | $5,815 |

* Throughout life expectancy

** Based on quarterly payments and a 3.4 percent charitable midterm federal rate

# Mayo Leaves Legacy of Service, Dedication

On August 1 of this year, Doug Mayo departed the College of Agricultural Sciences to begin his new position as Vice President of University Advancement at Minnesota State University-Mankato. Doug was a tremendous asset to the College of Agricultural Sciences and Colorado State University for over three years. We thank him for his dedicated service, and wish him luck in his new position.

During Doug's time as Director of Development, he worked tirelessly to further the College's strategic plan addressing multidisciplinary issues facing the agriculture industry in Colorado and beyond, as well as to grow relationships with alumni, industry professionals and friends of the College of Agricultural Sciences. Doug's passion for agriculture and higher education were clearly displayed in his pride for Colorado State University and its mission.

## The College of Agricultural Sciences Development Team

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# New Scholarship Funds

**Thomas M. Young Student Support Endowment** – Created by an estate gift from Thomas M. Young, this account has the flexibility to provide both tuition scholarships as well as hands-on experiential learning support for students to apply the information they learn in the classroom. This fund gives the dean of the College of Agricultural Sciences the opportunity to direct financial support to the area of greatest need each year, all for the support of the College's students.

**Colorado Association of Meat Processors Scholarship** –The goal of this scholarship is to assist students with their education in the area of meat science, who have an interest in returning to a rural area to begin their career in the meat processing industry. The Colorado Association of Meat Processors wishes to support undergraduate students majoring in animal science or dual majoring animal science and agricultural and resource economics.

**Bill Jackson Agricultural Scholarship** – Bill Jackson, a *Greeley Tribune* reporter, covering news in agriculture for more than 25 years, was inducted into the Agriculture Hall of Fame in 2004. Growing up on the eastern plains of Colorado, Jackson graduated from Yuma High School and joined the staff at the *Tribune* in 1977. This scholarship supports students enrolled in the College with career aspirations in journalism.

Sign up for our Winter and Summer e-newsletter and other exciting College updates, announcements, and invitations by e-mailing us at CAS_VIP@mail.colostate.edu.

# Grants Bring New Research to DARE

Recent grants awarded to the Department of Agricultural and Resource Economics have begun a new era of research. Six separate grants will provide funding for research on a variety of topics. Although the quantity of grants for one relatively small department is noteworthy, it's the highly competitive nature of these grants that also deserves mentioning. They also are inter-departmental, inter-collegiate, and inter-university grants positioning DARE as a unique research catalyst.

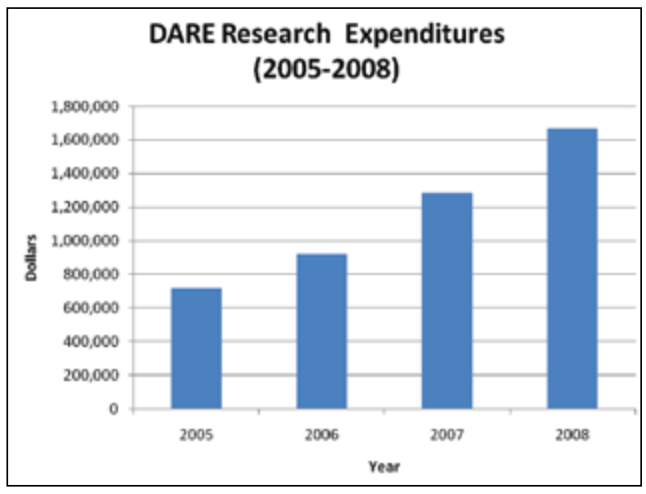
Two programs established by the United States Department of Agriculture awarded these grants. The first set of grants is sponsored by the USDA National Research Initiation Program, and the other is awarded by the USDA's Economic Research Service initiative called the Program of Research on the Economics of Invasive Species Management.

**Efficient Management Strategies for a Contagious Animal Disease Outbreak: Probability Distributions of Economic Impacts From Foot-and-Mouth Disease**
Principal Investigator: *Dustin Pendell*
Grant Type: *PREISM*

The project will analyze the selection of economically efficient contingency plans for control and management of foot-and-mouth disease, given probability distributions of economic value from alternative plans. The research team will determine the study region beyond which 95 percent of outbreaks would not spread, estimate the effects of disease outbreaks under alternative scenarios with disease spread models, develop distributions of welfare measures with an equilibrium displacement model, and show preferred strategies by analyzing the distributions of welfare measures using stochastic efficiency with respect to a function.

**Efficient Management of White Pine Blister Rust in High Elevation Ecosystems: A Dynamic Modeling Approach**
Principal Investigator: *Craig Bond*
Grant Type: *PREISM*

As the invasive fungus, *Cronartium ribicola*, continues to spread white pine blister rust (WPBR) throughout the Rocky Mountain West, high-elevation white pine species that populate recreation areas such as national parks and forests are increasingly threatened. Although management options have been developed and adopted by land management agencies, little research has been conducted on the economic benefits and costs of various management options to assist managers in their decision process.




The multi-disciplinary, multi-state team includes Patricia Champ (economist, USDA Forest Service Rocky Mountain Research Station), Anna Schoettle (research plant ecophysiologist, USDA Forest Service Rocky Mountain Research Station), William Jacobi (professor of forest and shade tree pathology, CSU), Cara Nelson (assistant professor of restoration ecology, University of Montana), Richard Sniezko (center geneticist, USDA Forest Service), Ronda Koski (research associate, BSPM, CSU), and Osman Hamdan (Ph.D. student, DARE, CSU).

**Organic, Locality, and Food Miles: Implications for Trade, Supply Chains, Environment, and Consumer Welfare**
Principle Investigators: *Dawn Thilmany, Yuko Onozaka, and Marisa Bunning*
Grant Type: *NRI*

There is a widening trade gap for organic foods as demand for these products outpaces domestic supply. Consumers also continue to seek more local food options. This project will assess the relative value consumers place on organic and local food choices to better inform the food industry and producers. The project will also assess potential welfare gains from increased availability of local and organic food options.

**Using Mountain Ecosystem Services to Provide Sustainable Economic Growth and Job Development in Rural Communities**
Principle Investigator: *Catherine Keske*
Grant Type: *NRI*

The research involves working with rural communities to capitalize on one of their natural assets, 14,000-foot peaks, or 14ers. This NRI grant builds upon and extends a previous study on the positive economic contribution that spending by hikers and climbers make to the county economies. One of the goals is to work with local and community stakeholders to determine how they wish to capitalize on the 14ers. If they desire tourism development, the project will use the results of the 14er surveys to help the community develop a business plan for marketing 14ers, while at the same time putting safeguards in place to protect the natural environment and the social environment of their communities.

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## CSU Researcher to Evaluate Bison Marketing Strategies

*by James Beers*

A Colorado State University agricultural economics professor is leading an evaluation of the National Bison Association's marketing strategies. Dawn Thilmany, professor in the Department of Agricultural and Resource Economics at Colorado State, will help gauge the effectiveness of a series of events in Salt Lake City, Utah. The promotion, which runs through Oct. 31, includes ways to introduce consumers to bison. The activities are funded by a grant through the U.S. Department of Agriculture and administered by the Colorado Department of Agriculture.

*Dawn Thilmany will lead the evaluation into the National Bison Association's marketing strategies and options.*

Colorado State's involvement with the bison association will lead to expanding ways that bison producers can market products to the public. "With this project, CSU will evaluate how consumer attitudes, awareness, and sales related to bison are affected by joint promotional activities with chef and food retailer partners," Thilmany says. "Our findings may allow us to make more affordable, targeted marketing strategy recommendations to smaller food producers."

One chef in Colorado already features bison occasionally on his menu. Tom Stoner, who manages the Spoons Soups & Salads restaurant in the Lory Student Center on the Colorado State campus, featured a different bison-based soup at least one day of each week during September. Soups such as High Plains Buffalo Chili, Cowboy Buffalo Stew, and Colorado Farmers Market Vegetable with Buffalo were served. Stoner said that bison is versatile and complements produce that he receives from local farmers markets.

Thilmany, who has completed various consumer and economic impact analyses for meats, produce, and a variety of foods, hopes to have her evaluation of the promotional efforts for bison completed and shared with producers by Spring 2009.

## New Faces in DARE

**Stephan Kroll** joined the Department of Agricultural and Resource Economics as a new assistant professor. A native of Germany, he received a Ph.D. in economics from the University of Wyoming in 1999.

His main research and teaching interests are in environmental and experimental economics. He is particularly interested in behavioral and institutional underpinnings of environmental policies, in theory and experiments. His research has been published in economics journals (such as *American Journal of Agricultural Economics*, *Economic Inquiry*, and *Experimental Economics*) as well as in interdisciplinary journals (including *Human Dimensions of Wildlife*, *Cambridge Review of International Affairs*, and the *Journal of Happiness Studies*). Routledge published his co-edited book *Environmental Economics, Experimental Methods* in December 2007.

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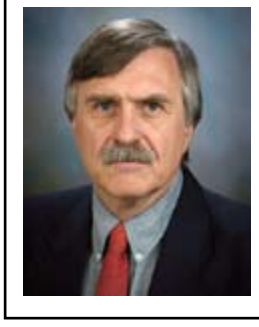

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# USMEF Internship Exposes Ph.D. Student to International Markets

With 96 percent of the world's population living outside the United States, the red meat export market can vary significantly from the U.S. domestic market. Yet with income levels increasing globally, there is more international demand for high-value red meat items than ever before.

This information comes from the American Meat Science Association who, in conjunction with the U.S. Meat Export Federation, offers two places in their Graduate Student International Internship Program to study and address the constraints that various international markets have on the U.S. meat industry's ability to export.

"I applied for the internship in April, found out I was selected in May, and flew to Japan in June!" exclaims meat science Ph.D. student Jessica Meisinger.

*Jessica Meisinger, left, and friend Emily McDonald handed out samples of American steak to consumers with a trade team from Nebraska and Iowa at an "American Fair" in Tokyo, Japan.*

For the next two months, Meisinger carried out the objectives of the internship in Tokyo, Japan. "My main responsibility was to create fact sheets on various up-and-coming issues that may affect meat export between the U.S. and Japan, such as cloning, genetic modification, and pesticide residues. These fact sheets can then be used to educate the media and the public," explains Meisinger.

Meisinger is no stranger to researching abroad in her Ph.D. studies. In the last year, she's been to Mexico, Hong Kong, Taiwan, China, and now Japan. "Having that travel experience made me more prepared for this experience," explains Meisinger. While in Japan, she also travelled to Himeji, Kyoto, and Osaka.

"I have been interested in Japanese culture for years. I studied Japanese for four years in high school... I really enjoyed learning about the agriculture industry in Japan, as well as learning how beef and pork are utilized."

Originally from Urbandale, Iowa, Meisinger received her bachelor's degree from Iowa State University in both animal science and sociology. Her master's degree is from the University of Nebraska in meat science and muscle biology, and now she is completing her doctoral degree at Colorado State University in meat science. "My research at CSU has been on export. . . to get a better idea of what products are exported from the U.S. and the value of beef exports to producers," adds Meisinger.

Part of her experience was attending two USMEF cooking schools. "These schools are taught by famous cooking teachers. People attend class to learn new ways to use American pork, which USMEF points out is delicious and economical," says Meisinger.

*Cooking schools are so popular that USMEF has to allocate spots in the school using a lottery.*

She also experienced the turmoil of the Korean protest and riots concerning American beef that took place while she was in Japan. "It was really interesting to read about it from the Asian perspective." Among other firsts, was the experience of her first earthquake. "It was nothing special to my co-workers, but it was exciting to me," Meisinger describes.

The experience has proven both beneficial and inspirational for Meisinger. "Broadening my horizons and learning about the American agriculture industry both from within it and from outside it has really helped my understanding of opportunities for U.S. producers." She goes on to say, "CSU is an excellent university that truly encourages graduate students to get real-world experience as well as an education. I encourage students to gain experience anywhere they can."

# Award-Winning Faculty and Staff

## University Distinguished Professor Honored by IAFP

The Harry Haverland Citation Award, presented by the International Association for Food Protection, was given to John Sofos for his comprehensive record of IAFP support and involvement. Since 2007, Sofos has held the title of University Distinguished Professor and has received more than $13 million in grants, contracts, or donations for research in the field of food technology and safety. Currently, he is director of the Center for Meat Safety and Quality and leader of the food safety cluster of the Colorado State University Infectious Diseases Supercluster. His outstanding commitment to his students and the betterment of Colorado's food quality and safety helped to earn him this distinguished honor. The award was sponsored by ConAgra Foods, Inc.

## Former Department Head Receives ASAS's Most Prestigious Award

Given only to members of the Western Section of the American Society of Animal Science who have made the most outstanding contributions to animal agriculture in the western region, the Distinguished Service Award reigns as the most prestigious honor that the Western Section ASAS bestows upon its members. David Ames, a former animal sciences department head of 17 years, was given this great recognition. His impact on students and teaching programs is commendable, and he has guided many young people toward accomplishments in production, academia, and industry professions.

## Wailes Presented with 2008 Top Choice Award

Considered the most prestigious award from the Colorado Livestock Association, the Top Choice Award was given to Bill Wailes, Head of the Department of Animal Sciences. Wailes has been a cornerstone in the dairy and livestock industry for many years. Throughout his 28-year career at Colorado State, Wailes has taken the animal sciences program to a new level. During the recognition of the award, Jim Docheff Jr. said, "He (Wailes) has a knack for installing a can-do attitude in people and giving everything your best." Wailes was recognized for his commitment, leadership, inspiration, and overall outstanding contributions to the animal science industry in Colorado.

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## Bowling Receives W.D. Farr Scholarship

For his work in meat science and food safety, Mitchell Bowling, a Ph.D. candidate in the Department of Animal Sciences, was awarded the W.D. Farr Scholarship. The award, sponsored by the National Cattleman's Foundation, was presented to Bowling for his degree work in increasing exports of U.S. meat products.

His drive for success and leadership in the tradition of Farr helped him become a top candidate for this prestigious scholarship. His career goal is to actively contribute to the beef industry by applying scientific principles to solve problems with the end goal of making a safer, better meat product for the world to consume.

The late W.D. Farr is considered one of the cattle industry's greatest pioneers. His 75-year career in agriculture included being the National Cattlemen's Association's first president.

# Largest Single Grant to Study Biofuels Awarded to CSU Researchers

*by James Beers*

Agricultural researchers at Colorado State University are accelerating research needed to develop new crops for biofuels.

## More Energy per Plant Available From Cellulose

Unlike ethanol derived from starch in corn seed, cellulosic biofuels are made from cellulose, which is the major component of cell walls in stems and leaves of all plants. Cellulose is superior to starch because there is much more energy available from it per plant.

## Research Team Focused on Rice

Funding for research to increase cellulose production in plants (increase biomass) has been awarded from the U.S. Department of Energy, U.S. Department of Agriculture, Colorado Center for Biorefining and Biofuels (C2B2), and the Colorado State University Clean Energy Supercluster. The team is led by Jan Leach, a professor in the Department of Bioagricultural Sciences and Pest Management. Leach is joined on the project by Colorado State faculty members Daniel Bush, professor in the Department of Biology, and John McKay, professor in the Department of Bioagricultural Sciences and Pest Management, as well as Hei Leung, plant pathologist at the International Rice Research Institute in the Philippines.

*Jan Leach, professor in the Department of Bioagricultural Sciences and Pest Management, will be heading up the research effort.*

Colorado State scientists will use rice instead of switchgrass and other promising biofuel crops in order to identify the genes that could increase productivity and access to the plant's cell walls, which is the basis for cellulosic biofuels, according to Leach. "We are using rice as a model because of the rich information available from the genome sequencing projects and the availability in rice of many tools and genetic resources," Leach says. "Most of the target biofuel crops, such as switchgrass, do not have the wealth of tools and information that rice has, so it would take much longer to characterize the biomass accumulation processes in those crops than rice."

"Food crops plants have become smaller as we have bred for higher yields. For the biofuel project, we are looking to wild species to go back to the large size and smaller grains," said Courtney Jahn, a C2B2-Chevron post doctoral fellow who recently joined the group.

The use of rice as a source for biofuels also has practical applications. Rice is widely grown in many developing countries and is the primary source of calories for about 40 percent of the world population. About half of the agronomic crop waste produced worldwide is rice straw, which represents a biofuel feedstock for energy production in resource poor communities. Thus, new advances using rice as a biofuel model would translate into direct applications on a global scale for this important food crop, according to Leach.

## Examining Genes to Speed the Development of Cellulosic Biofuels

"While rice is a food crop – and a widely grown one at that – it is the information from its genes that could speed the development of new crops for cellulosic biofuels," Leach says. "We are not promoting rice as a biofuel crop. We are instead using information from its genes to help expedite the improvement of other plants such as switchgrass."

# Searching for Clues: What's Happening to the Black Walnut Trees

The identification and description of a serious new disease of black walnut trees has been a focus of attention this past year by members of the Department of Bioagricultural Sciences and Pest Management. Recently dubbed "thousand cankers disease of black walnut," affected trees go into serious decline through the combined effects of a tiny bark beetle and one or more associated fungi. Ultimately, trees are killed. Plant pathology professor Ned Tisserat and entomologist Whitney Cranshaw have teamed up to better understand what is happening and to develop ways to better manage it.

The discovery of thousand cankers disease came by following up on a suspicious cluster of recent tree die-offs in several Front Range communities. Originally, these were thought to be related to drought, although a bark beetle previously unknown in Colorado, the walnut twig beetle (*Pityophthorus juglandis*), was always present in the dying trees.

"I always had trouble believing that this tiny bark beetle could do the kind of damage we were seeing in black walnut trees," says Cranshaw. "To me, what brought it all together was Ned's discovery of the fungus the beetle carries."

The fungus, a previously undescribed *Geosmithia* species, is apparently carried into trees when the beetles enter to produce egg galleries. In black walnut, the fungus has found a susceptible host and aggressively grows, producing large dead areas (cankers) at each point of attack. Where beetle attacks are abundant, the cankers girdle limbs, causing them to die. In addition, a second canker-producing fungus, a strain of *Fusarium solani*, has been found to develop in trunks of affected trees.

*Ned Tisserat, right, and a representative from Taddiken Tree Co. in Boulder, left, examine a cut black walnut tree infested with fungi-carrying walnut twig beetles.*

"We're trying to understand the biology – what's going on, how the beetle is transmitting the fungus, and how the fungus is attacking the tree," says Tisserat. "If we can figure that out, then we might be able to recommend strategies for controlling it."

"The bad news is that thousand cankers disease can be devastating to black walnuts and has apparently not only shown up in Colorado but also in several other western states," says Cranshaw. "I guess the good news is that it has not moved into the eastern states, where black walnut is an important native tree. If that happens, it could be a natural disaster. At least we now know what we are up against and can be on the lookout for its spread."

# Ph.D. Student's Research Uncovers New Find

Todd Gaines, a Ph.D. student in the Department of Bioagricultural Sciences and Pest Management, developed novel information on gene flow among winter wheat varieties at the farmer field level in his M.S. program, which was supervised by Pat Byrne of the Department of Soils and Crop Sciences and Phil Westra of BSPM. This research documented the degree to which genetic traits from one wheat variety can move to other varieties and how the biology of each variety affects these interactions. Gaines' research was supported by a USDA biotech risk assessment grant and resulted in three refereed publications including a new publication on this important biotech risk assessment from the Colorado State University Agricultural Experiment Station.

Now nearing the completion of his Ph.D. program in BSPM, Gaines is co-advised by Jan Leach and Phil Westra on the molecular and genetic aspects of glyphosate resistance in Palmer amaranth, an important weed in the pigweed complex in the United States. Gaines' novel research has uncovered a mechanism of herbicide resistance based on a molecular mechanism not seen before in a weed. This unique finding resulted from a strong collaboration among the BSPM molecular faculty, including Steven Chisholm and Sarah Ward of soil and crop sciences and the Colorado State weed science program.


Gaines also benefited from the involvement of Chris Preston, a visiting scientist in Colorado State's weed science program in 2005. Gaines truly represents a new type of weed science graduate student who must cover the discipline from field-applied studies to use of molecular techniques to help solve weed management problems. In January, Gaines and his wife, Jerrica, will travel to Perth, Australia, where Gaines will begin a two-year post doctoral project with Steven Powels of WAHRI conducting additional research on herbicide-resistant weed issues.

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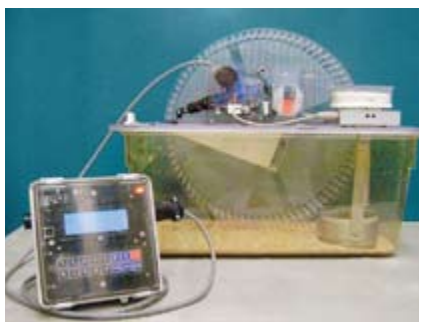
# Activity Wheel Helps Gauge Effect Exercise Has on Breast Cancer

*by James Beers*



*Henry Thompson and his team of student engineers have developed a computer-driven activity wheel to study the relationship between exercise and the development of breast cancer.*

Students from Colorado State University's Department of Mechanical Engineering are teaming up with the University's Cancer Prevention Laboratory to build equipment that studies the effect exercise has on the development of breast cancer. The student engineering team has developed a computer-operated, adjustable-speed, motorized "activity wheel" that reinforces running behavior with a food reward as part of a preclinical testing model.

Henry Thompson, director of the Cancer Prevention Laboratory and professor in the Department of Horticulture and Landscape Architecture, said physical activity may curb abnormal cell growth. "We are studying how energy balance – the balance between energy consumed through food and energy used through activity – influences cellular actions such as cell growth. The ability of cells to multiply abnormally is the key to the development of cancer," Thompson says. "It appears that maintaining energy balance by eating moderately and engaging in regular exercise puts the brakes on cell proliferation, and without cell proliferation, tumors can't form."

A key to preventing abnormal cell development is vigorous physical activity. Thompson and his team of student engineers have developed a computer-driven activity wheel, which is like a high-tech running wheel that hamsters might use. "This is the third iteration of the wheel," says Jay Waterman, a recent Colorado State mechanical engineering graduate who has worked on the project for the past two years. "We've added a brake to the wheel to control its speed and a control panel to better track how many revolutions the wheel makes, the intensity of the revolution, and how many food pellets are dispensed to the rats."

Preclinical testing of various exercise conditions are currently underway at the Cancer Prevention Laboratory using the student-designed wheels, setting Colorado State apart from colleagues around the world in the University's ability to study the effects of physical activity on the development of cancer. Early results show that rats that exercised the most vigorously had the lowest incidence of breast cancer. The finding is similar to results in human studies conducted by other researchers, according to Thompson. "However, we unexpectedly found that the degree of protection against cancer declined as the time spent exercising increased."

Thompson noted that the intensity of any workout may be the key. "It's possible that physical activity will benefit your body and reduce your risk of cancer, even if the pounds don't melt away," Thompson says. "To influence energy balance, physical activity should be vigorous. Vigorous activity is defined as activity intense enough to boost the heart rate and work up a sweat.

"We agree with the current recommendation of 30 minutes of moderate physical activity per day to reduce cancer risk and 60 minutes of moderate activity or 30 minutes of vigorous activity per day to prevent weight gain and increase fitness. Brisk walking is an example of moderate activity. Jogging and aerobic dancing are examples of vigorous activity." However, Thompson notes that the ongoing work with the activity wheel underscores the fact that, while some exercise is good, more is not necessarily better.

The development of the activity wheel is the culmination of seven years of work and is the basis for a design project by Waterman and fellow Colorado State students Abby Wilbourn and Becca Beegles. Preclinical test models of the wheel are being refined with a goal of manufacturing a new generation of the wheels for use in a federally funded program of research investigating the role of lifestyle factors in reducing the risk for breast cancer as well as the likelihood of recurrence in cancer survivors.

# Students Gain Real-World Experience in Two Local Projects

During the Spring 2008 semester, students in the Landscape Design and Contracting Senior Design Studio completed conceptual design work on two community engagement projects. Both of these works were reviewed and approved according to the state of Colorado law prior to construction.

## Boardwalk Park in Windsor, Colo.

Ensuring historically accurate activity spaces and planting designs were priorities for students involved in the Windsor Museum at Boardwalk Park project. Through research, the students created planting and circulation plans to accompany a collection of artifacts located at this park. Approximately 20 students participated in groups of two. Each team invested 80 to 100 hours through site visits, preliminary presentations, and manual labor. Lydia Young and Celsey Svenson won this design competition, based on the Town of Windsor's decision.

"It was great. These kinds of projects make theory application go from the classroom to the field. It not only benefits the students, but it also benefits the community and educates them on the programs at the College of Agricultural Sciences," explains Zachary Johnson, Colorado State University program coordinator.

## Del Norte Trails Association, Del Norte, Colo.

Students Jamie Jeffers, Sarah Keuhn, and Matt Tingley were selected to work with the Del Norte Trails Association to complete conceptual trail plans and interactive activity spaces for residents and visitors to Del Norte. "We saw it as a quick way to get very close to professional help in a short amount of time. It made good economic sense, plus they were a part of the target audience," explains Marty Aslplin, vice president of Del Norte Trails Org. Inc. and mayor pro tem of Del Norte, Colo.

*Jamie Jeffers, Matt Tingley, and Sarah Kuehn (from left) are pictured while collecting site information on the Del Norte project.*

The project scope included locating trails for a wide range of activities including exercise and leisure use. Activity spaces were designed to capitalize on views, recreation opportunities, and historically significant landmarks. Additionally, plant material was recommended for this project, which is located at nearly 8,000 feet above sea level.

"Everyone who's seen it has been completely impressed," says Aslplin. "It's more than we expected and everything we could have asked for."

# CMG Training Goes High Tech

*by David Whiting, Extension Consumer Horticulture Specialist and CMG Coordinator*

New distance education technology has opened Colorado Master Gardener training opportunities to rural Colorado. Over the years, the CMG program faced many challenges in delivering training to rural Colorado, where small class size and extensive instructor travel makes delivery impractical. In 2007 and 2008, the CMG program piloted the use of distance education technology for CMG training. Using *Adobe Acrobat Connect* software, two-way audio and visual are transmitted to local counties via the Internet.

Classes are much more than a talking head. Interactive student activities break up short lecture segments. These may include small group discussions, worksheets, lab-type activities, and question/answer segments. In distance education teaching, expanded interaction between students partially replaces the direct interaction between the instructor and student (as found in the traditional classroom).

Before the use of distance education technology, the program would invest 75 staff days and $8,000 in travel costs to reach 100 students in four

*continued on Page 11*

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# Introducing Two New Faculty Members

**Francesca Cotrufo** recently joined the Department of Soil and Crop Sciences as professor of soil ecology.

Cotrufo's research interests include stable isotope biogeochemistry, soil ecology, global change, water stress and shrubland ecosystems, litter decomposition, radiocarbon dating, and soil organic matter dynamics.

From 2006-2008, Cotrufo was a professor in the Department of Environmental Sciences at the University of Naples, Italy. She earned her Ph.D. in 1994 in soil ecology from Lancaster University/Institute of Terrestrial Ecology, United Kingdom.

Cotrufo lives in Fort Collins with her husband, Keith Paustian, and son.

**Jay Ham** recently joined our faculty as professor of micrometeorology and environmental physics.

Ham was a professor in the Department of Agronomy at Kansas State University, where for 16 years he led the program in environmental physics and micrometeorology. He received his bachelor's degree in 1984 from Kansas State and his master's degree in 1986 from Oklahoma State University, both in agronomy. In 1990, he earned a Ph.D. from Texas A&M University in soil science.

Ham lives in Fort Collins with his wife, Suzanne Hale, and two children.

# Eighth Annual Honored Alumni Awards

This year's Honored Alumni Awards were presented to Vernon L. Cooksey and Wendell A. Norvell on Sept. 5. This award was established through a gift given by **Wayne and Joyce Keim** in 2001. Each awardee was presented with a commemorative barometer, and their names were added to the perpetual plaque, which hangs in the Main Office.

**Vernon L. Cooksey** is a Colorado native and an active, third-generation farmer, with crops and cattle on 10,000 acres with his three sons and their families in Roggen and Hoyt, Colo. He is an active participant in the Colorado and National Association of Wheat Growers, Colorado Corn Growers, and Colorado Seed Growers. He earned his B.S. in agronomy from Colorado State in 1962.

**Wendell A. "Bud" Norvell's** primary research interests concern the chemistry, solubility, plant-availability, and geographic distribution of micronutrients and trace elements in soils. He earned his B.S. in Soil Science from Cornell University in 1964 and his M.S. in 1968 and Ph.D. in 1970 in Soil Chemistry, both from Colorado State.



# Ninth ICPA Conference Culminates in Denver

The ninth International Conference on Precision Agriculture was held for the first time in Denver, July 20-23. The conference was jointly organized by Colorado State University and the Foundation for Agronomic Research and International Plant Nutrition Institute. The conference attracted more than 450 agricultural scientists from varied disciplines, industry professionals, producers, extension agents, crop consultants, and others from 43 different countries. The conference hosted 34 concurrent sessions spread over three days, with approximately 250 oral and poster presentations on some aspect of precision agriculture.

Raj Khosla, associate professor of precision agriculture, Department of Soil and Crop Sciences at Colorado State University, and the chairperson for the ninth and the tenth International Conference on Precision Agriculture 2008 and 2010, said in his inaugural address that precision agriculture is about five Rs. The **R**ight input, at the **R**ight time, at the **R**ight place, in the **R**ight amount and in the **R**ight manner." Khosla added that "in the developed world, we use advanced technologies, while in the developing world and emerging economies, one can take advantage of skilled labors to deliver the five Rs."

The conference keynote speakers were Joseph Berry and Simon Blackmore. Berry talked about the advances in precision agriculture over the last 20 years. Blackmore's talk was focused on the upcoming technologies of the future agriculture, such as individual robots working across the field in day to day production practices. Talking about his current project, Future Farm, Blackmore said that the agricultural industry needs to focus on developing more intelligent machines that are sensitive to plant needs. The use of robots, he said, can provide opportunities to conduct operations that are not currently possible or that currently cost too much time and money.

**WASHINGTON, DC, JULY 22, 2008 –** Recognizing his strong support for agriculture and the conservation of Colorado's and the nation's lands, Colorado Senator Ken Salazar received the 2008 Excellence in Soil Stewardship Award presented by the Soil Science Society of America on July 17.

"It is a great honor to present the Soil Science Society of America's 2008 Excellence in Soil Stewardship Award to Sen. Ken Salazar," said SSSA President Gary A. Peterson of Colorado State University. "As a farmer and rancher, Sen. Salazar has learned the importance of proper soil management to ensuring the long-term productivity of agricultural lands."

Peterson presented the award to Sen. Salazar at a luncheon in the U.S. Capitol and was joined by the leadership of SSSA and the Crop Science Society of America, both scientific societies based in Madison, Wis.

# From the Desk of Dr. Peterson

Fall is always an exciting time at Colorado State University! Classes are in session, the parking lots are full, and we are back to normal with bustling hallways and all of the enthusiastic energy generated by students.

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 January 1, you have given more than $9,300 to our department for scholarships, assistantships, and general department use. The gifts given for general department use are especially important and helpful because they allow us to do the extras for students and faculty. Thank you!

**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.

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# Determination of Consumptive Water Use by Alfalfa in the Arkansas Valley

One of the recommendations that came out of the Kansas v. Colorado Arkansas River Compact litigation is for Colorado to use the ASCE (American Society of Civil Engineers) Standardized Penman-Monteith equation to estimate crop consumptive use in the Arkansas River Valley. The Penman-Monteith equation (PME) calculates the evapotranspiration (ET) of a reference crop, which in Colorado is alfalfa, using meteorological data such as maximum and minimum temperature, relative humidity, solar radiation, and wind speed (Allen et al., 1998). The ET of other crops (ETc) is derived from reference ET (ETr) with the equation:

ETc = ETr x Kc for well-watered crops

ETr is defined as the evapotranspiration of a non-stressed, well-watered alfalfa crop, 50 cm in height, covering the ground fully. In other states, the reference ET is that of a non-stressed grass or similar short crop that is 12 cm in height at full canopy and is usually denoted ETo. Direct measurement of ET is best achieved with weighing lysimeters. Precision weighing lysimeters measure water loss from a control volume by the change in mass with an accuracy of a few hundredths of a millimeter.

Kc, or crop coefficient, varies with crop type, growth stage, crop condition (plant density, health, etc.), and soil wetness, among other factors. When the crop is water-stressed, ETc = ETr x Kc x Ks. The coefficient Ks is derived from the water balance (water inputs minus water outputs) in the root zone.

In the absence of locally generated algorithms for calculating ETr with PME and Kc, the Colorado Division of Water Resources has been using estimates from Kimberly, Idaho, and Bushland, Texas. However, the crop growing conditions (soil, elevation, climate, etc.) in the Arkansas Valley vary greatly from the prevailing conditions in Kimberly or Bushland. In his findings relating to the Arkansas River Compact compliance litigation initiated by Kansas, Special Master Arthur Littleworth accepted that the method used for calculating crop consumptive use in the Arkansas Valley be changed from Blaney-Criddle to PME. Consequently, Colorado's Attorney General requested that the Colorado Water Conservation Board fund the "design, installation, and operation of weighing lysimeters at the Colorado State University Agricultural Experiment Station at Rocky Ford."

## Lysimeter Construction Project

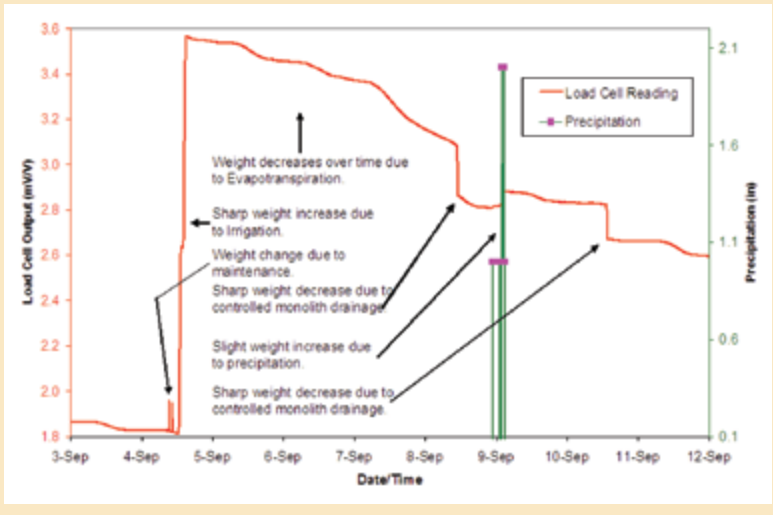
The Colorado Water Resources Board provided $340,000 for the fabrication and installation of two weighing lysimeters at the Arkansas Valley Research Center. The large or test lysimeter was installed in 2006, and the reference lysimeter is currently being installed.

The test lysimeter consists of an inner tank of 10 ft x 10 ft x 8 ft and an outer containment tank. The chamber between the two tanks houses the weighing mechanism, the drainage tanks, and data loggers and has standing room for six people. The inner tank was filled with undisturbed soil (soil monolith) from the same field where the lysimeter is located. The photo shows the tank being lowered into its permanent location. The soil tank moves freely within the outer tank, and the two are separated at the top by a fraction of an inch.

*Consisting of an inner and outer tank, the test lysimeter is being lowered into its permanent location.*

The weighing mechanism consists of a mechanical lever scale-load cell combination. The load cells are connected to a Campbell Scientific CR-7 data logger that records the weight of the inner tank plus soil every 10 seconds. The readings are given in millivolts per volt (mV/V). The change in total weight of the soil tank represents the amount of consumptive water use (transpiration plus evaporation from the surface of the soil monolith) by the crop. An example of a load cell reading is shown below.

The fabrication and construction team included Frank Johnson and Doug Whitt (AES), Paul Irvin (USDA-ARS), Lane Simmons and Kevin Tanabe (AVRC), and Dale Straw and Tom Ley (Colorado Department of Water Resources).




**Complete project details are provided on the College's website, along with data concerning the site characteristics and other photographs of the project. Log on to www.agsci.colostate.edu/development/lysimeter.htm to view this information.**

## Research and Operations

The Colorado Water Institute and the Agricultural Experiment Station have received $300,000 in research and operations funding from the Colorado Water Conservation Board to conduct this project at the AVRC for three years. The overall goal of this project will be to determine consumptive water use by alfalfa in the Arkansas Valley using data obtained from weighing lysimeters at the Arkansas Valley Research Center and the CoAgMet network in the valley.

*The test lysimeter after installation in 2006.*

This project will compare actual and calculated water use by alfalfa in the Arkansas Valley. The project is a multi-year effort to characterize crop water use in the valley and it will ultimately provide data required to address consumptive use issues inherent in the Colorado-Kansas lawsuit. In addition, the data collected will allow a comparison of ET data for the Arkansas Valley with data obtained in other irrigated regions of the United States with implications on the applicability of data to other regions of Colorado.

The results will be summarized in a peer-reviewed technical report published by the Colorado Water Institute. In addition to the Colorado Water Institute publication, a manuscript will be developed and submitted to at least one peer-reviewed scientific journal for publication.

The research team includes Mike Bartolo and Lane Simmons (AVRC), Alan Andales (Soil & Crop Sciences), Nolan Doesken (Colorado Climate Center), Luis Garcia (Civil & Environmental Engineering), Lee Sommers (Agricultural Experiment Station), and Reagan Waskom (Colorado Water Institute).

A new technical bulletin, TB08-02, from the Agricultural Experiment Station titled *The Large Lysimeter on the Arkansas Valley Research Center: Objectives and Accomplishments* and authored by Abdel Berrada, Lane Simmons, Dale Straw, Michael Bartolo, and Thomas Ley, describes the project in detail. The publication can be accessed at www.colostate.edu/Depts/AES/Pubs/pdf/tb08-2.pdf.

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# Bringing New Technologies to the Farm

Big SID drives up to a farm, loads the farm's oil seed crop, produces the month's biodiesel needs, sets the meal by-product aside for farm livestock, and travels on to the next farm.

And just who (or what) is SID? Seeds Into Diesel. A venture capital grant from Colorado State University Extension led to initial efforts in 2007 to build Little SID to demonstrate the viability of converting seeds into diesel.

The average family farm consumes 20,000 gallons of diesel fuel per year; larger farms can consume 100,000 gallons or more. Production of biodiesel begins with producing straight vegetable oil (SVO) and treating it with chemicals to make biodiesel.

SVO itself could be the ideal biofuel to replace diesel and current biodiesel on farms because the SVO energy ratio (output/input) is higher. The meal by-product from producing SVO is premium quality for livestock feed – an essential component to total economic viability of biofuels.

A cooperative effort between the International Center for Appropriate and Sustainable Technology (iCAST) in Lakewood, engineering students, and CSU Extension agricultural biofuels expertise led to the creation of a Big SID prototype in 2008.

Mounted on a donated flatbed military truck, Big SID is designed to produce farm or community-scale biofuel oil. The oil seed crusher is scaled

to five tons per day, which translates to 16 to 20 gallons of biofuel per hour depending on seed oil content.

CSU Extension's Jerry Johnson and graduate student Nicolas Enjalbert are leading efforts to develop options suited to Colorado's agricultural conditions.

"Oilseeds offer an option that can reduce water use under limited irrigation," says Johnson. "Spring oilseed crops add value to the cropping system by adding an additional crop to the rotation."

In 2007, five oilseed crops were studied: soybean, safflower, sunflower, canola, and camelina. Performance trials were conducted at nine locations in Colorado under three environmental conditions: dryland, limited irrigation, and full irrigation. Although commercial canola hybrids are currently available, their lack of heat and drought tolerance leaves them poorly adapted to Colorado.

Wide yield variations among cultivars and environments in a number of studies in Colorado and elsewhere led to plans for a more systematic study to be conducted through the 2009 growing season. The findings will provide information on suitable crop species, appropriate crop production practices, including irrigation regimes, and the establishment of a multidisciplinary oilseed/biofuel crop development team.

Little and Big SID are proving that vegetable oil contains an energy source that lends itself well to combustion applications. For more information regarding efforts in energy and agriculture, visit www.ext.colostate.edu.

# First Annual 4-H Gala Event and Ford 150 Truck Raffle

Mark your calendars and get your tickets for the First Annual 4-H Gala Event to be held Oct. 11, beginning at 6:30 p.m., at the Wings Over the Rockies Air and Space Museum in Denver. The master of ceremonies is Bazi Kanani, Channel 9 news anchor and reporter.

4-H is the largest out-of-school youth program in the United States, with more than seven million members and 500,000 teen and adult volunteers. Studies have demonstrated that 4-H youth are less likely to engage in risky behavior such as alcohol consumption and drug use and are more likely to have positive relationships with adults and better grades in school.

Colorado State University 4-H Youth Development programs teach more than 100,000 youth (5-18 years old) life skills each year through hands-on learning projects in more than 40 interest areas, including rapidly growing programs in science, engineering, and technology. Because there are no organized 4-H clubs in the county of Denver, the Colorado state 4-H program is undertaking a major effort to expand youth engagement in the city.

The 4-H Foundation and the state 4-H Office have teamed up to present the gala to help raise funds for the Denver Metro area 4-H program as well as expand the image of 4-H and Extension statewide.

Additionally, Rocky Mountain Ford Stores donated a 2008 Ford XLT F150 4x4 pickup truck to the Colorado 4-H Foundation to help raise funds for 4-H.

"The funds raised from the raffle will help us provide the 4-H learning experience to many more kids in Colorado," says Gary Small, executive director of the Colorado 4-H Foundation. The truck raffle drawing will take place during the 4-H gala.

Learn about the 4-H gala and the Ford truck raffle at www.colorado4h.org/index.shtml or call the Colorado 4-H office for information or to purchase tickets at (970) 491.1152 or (970) 491.1537.


## New Extension Website

After many months of usability studies and design consultation, Colorado State University Extension rolled out their new website at the same url, www.ext.colostate.edu, on Sept. 1. The user-friendly site has a more inviting look with warmer colors, updated graphic elements, and improved navigation.

Some highlights of the new site include a multimedia zone, more prominent and consistent navigation throughout the various levels of the site – including a single navigation button linking to all fact sheets and other publications for each topic area – and sections for current news and events and related resources on campus and nationwide.

The site is designed to reach both existing and potential Extension clients with information in emerging online formats as well as traditional communication modes.

## Colorado State Extension Announces Associate Director

**Jan Carroll, Ph.D.,** was recently appointed associate director of CSU Extension. Carroll will provide leadership, strategic planning, project management, and summary evaluation and assessment processes for statewide programs.

To foster interdisciplinary team efforts and increase grant funding, she will work closely with college leadership and Extension specialists on campus and Extension field leadership and agents throughout Colorado.

Carroll completed her Ph.D. in vocational education with an emphasis in human resource development and her master's degree in consumer science, both from Colorado State University.

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## Blach Family Legacy, *continued from Page 1*

Three of Patty's five children have graduated from CSU: Katie ('01), Hannah ('03), and Maggie ('06).

*Patty Metzler passed away in April 2007 from multiple sclerosis.*

**Mary Kay Robertson (attended, '72)** is fifth in the line of nine siblings. She and her husband own a lumber yard and work in the beef industry in data collection. "Our parents never said, 'You have to go there,' but since we grew up at CSU, there was no fear about attending a big university," she says.

Mary Kay's children, Teresa ('99), Tim ('01), and Thad ('02), all work in the livestock industry in Colorado or Nebraska.

**Randy Blach ('80)** is eighth in line. Bob, Randy, and Ed – the last three of the nine siblings – were always referred to as "the three little boys." "It wasn't until college that I had a first name," laughs Randy. He studied animal science and was a member of Farmhouse Fraternity, the Livestock Judging Team, and several other agricultural science groups.

As CEO of Cattle Fax, a market research and analysis firm for cattlemen across the country, Randy regularly runs into CSU alumni. "CSU has turned out so many leaders all over the United States and the world. I travel a lot and frequently run into many former classmates. In fact, when I went to Brazil, the first person I saw was a classmate from CSU," he says.

**The other Blach siblings:**
Bernie Blach ('71, economics) – *Bernie passed in May 2008 from amyotrophic lateral sclerosis.*
Tim Blach (attended CSU)
Nancy Curtin (attended CSU)
Bob Blach ('79, farm and ranch management)

Randy has served on advisory boards and committees for both the College of Agricultural Sciences and Athletics, and he's a member of the CSU Beef Club, a group of alumni who raise funds for agricultural and athletic scholarships, netting more than $500,000 in the past 10 years.

Randy's wife, Karen ('80), graduated with a degree in human development and family studies.

**Ed (D.V.M. '84, M.S. '88)** is the last in the Blach line and the reason for that cake at orientation. He received two degrees from CSU, culminating in a Doctor of Veterinary Medicine.

Like his brother Randy, when Ed travels he runs into former classmates and friends of his family. "Years ago, I went to Salinas, Calif. to work for Gary Deter (D.V.M. '60), and we were having lunch at a café in Stockton. Someone overheard us talking about CSU and came over and said, 'You went to CSU? Do you know the Blachs?' Turns out, it was Granville Hutton ('48), a former roommate of my dad."

Ed practiced veterinary medicine for seven years before receiving an M.B.A. He and his wife and kids now live in Monument, Colo., where he does new venture development and consulting related to animal health, nutrition, management, and market research.

No matter which Blach you talk to, you'll hear the same response: "CSU was like a second home to us." And this comfort has inspired additional generations of Blachs to attend CSU. "I can't count how many of our cousins attended or attend CSU," says Randy Blach.

And although many of the Blachs are spread across Colorado or the nation, each Christmas, the family gathers at Perry and Teresa's house. With a new Blach generation under foot (Perry and Teresa's great grandchildren), the house is crammed with people. And because many of the family are in the cattle industry, Randy describes the Christmas meal as "beef is what's for dinner."

## Grants Bring New Research, *continued from Page 4*

**Developing Economically Sustainable Cropping Strategies for Small- and Medium-Sized Farms in an Increasingly Scarce Water Environment**
Principle Investigator: *James Pritchett*
Grant Type: *NRI, Grant #2006-55618-17012*

In the West, the economic sustainability of small and medium farms is tightly woven with water availability. The primary purpose of this integrated research is assisting small- and medium-sized farms in identifying economically sustainable cropping strategies in the face of limited water resources, while recognizing the regional impacts of water reallocation. Specific objectives include developing cropping systems that optimize use of a limited irrigation water supply while sustaining production at the farm scale; analyzing the profitability of these potential irrigation systems when farm prices and precipitation are uncertain; examining the impact of changing cropping patterns on regional economies; and conducting an innovative outreach and education program that assists small- and medium-sized farms when making water allocation and crop rotation decisions.

**Ecological and Economic Risk Assessment Decision Tool for Management of *Bromus tectorum* Invasions**
Principle Investigator: *Marshall Frasier and Cynthia Brown*
Grant Type: *NRI*

The goal of the proposed research is to develop integrated ecological and economic decision support tools that enable land managers, producers, and extension specialists to assess the condition of their rangeland with respect to *Bromus tectorum* invasion and its effects; evaluate management inputs necessary to improve the condition of the land; weigh the costs and benefits of the options under uncertain environmental conditions; and improve the ecological state of the land and economic status of the rancher. These questions have been driven by communication with members of the Southeast Wyoming Cheatgrass Partnership, a group of public and private land managers and extension specialists from Colorado and Wyoming.

## New Faces in DARE, *continued from Page 4*

**Kellie Enns** joined the Department of Agricultural and Resource Economics when the department agreed to house the Agricultural Education Teacher Preparation program. Kellie has assisted in the Agricultural Education program for several years working with the School of Education at Colorado State University.

Enns completed her undergraduate degree in animal sciences at Washington State University and then came to Colorado State University, where she completed her Master of Agriculture and teacher licensure in 1996. In 2002, Enns decided to take her passion for ag ed further and began her studies for a Ph.D. in educational leadership in the School of Education at Colorado State. She completed her Ph.D. last spring after studying the sustainability of secondary agricultural education programs in Colorado.

Now on faculty, Enns intends to focus her research efforts on improving program quality in all phases of agricultural education, both at the secondary and postsecondary level, and to study the impact of agricultural education on rural communities in Colorado. Improving and evaluating the impact of Supervised Agricultural Experiences at the local level will also be a focus of her research and outreach efforts.

## Training Goes High Tech, *continued from Page 7*

rural multi-county sites. With distance education technology, the program invests only 25 staff days to reach 225 students in 12 rural county sites.

Feedback from participants finds distance education the "new classroom" in our high-tech world. Taking into account travel and class size issues, half of the participating students find distance education satisfactory. The other half reports a preference for distance education classes over the traditional classroom. It allows for local classes rather than students traveling to multi-county sites. Students feel more self-empowered with their learning, as enhanced sharing of gardening experiences by students adds a localized flavor to learning experience.

Being promoted by participants, several counties in the 2007 pilot found a doubling of enrollments in 2008. Counties participating in the project include Archuleta, Chaffee, Eagle, Fremont, Gunnison, La Plata, Montezuma, Morgan, Routt, San Miguel, Summit, and Teller, plus the Golden Plains and San Luis Valley Areas.

## Alumni and Friend Updates

**Walter James (Jim) Gregory, retired CSU Extension employee**

Walter James Gregory, mostly known as "Jim," passed away on Sept. 9, 2008. Jim was hired by the Colorado A & M Extension Service in 1946 and worked for 34 years as the Moffat County agricultural agent in Craig, Colorado.

**Do You Have an Alumni Update?**

**Send it to:**
**CAS_VIP@mail.colostate.edu**
**or to**
***AG family* Alumni Updates**
**College of Agricultural Sciences**
**1101 Campus Delivery**
**Fort Collins, CO 80523-1101**

**Correction from Spring 2008 Issue**

Ag Experiment Station Page: Author of story is Samuel Essah, not Essault

Last paragraph, line 4: name is "Satina," not "Salina."

## Save the Date!

**CSU Day at the National Western Stock Show**

**Saturday, Jan. 17, 2009**

*Don't miss the 2009 Livestock Leader Presentation at the Department of Animal Sciences Social*

*3:00 p.m. in the Centennial Room, Third Floor Exposition Hall*

## Join Us for These Upcoming Events!

**1870 Dinner**
Saturday, Nov. 15, 2008
Lory Student Center, Main Ballroom
Contact: (970) 491-4601 or www.csuevents.colostate.edu

**Block and Bridle's Little National Western**
Saturday, Nov. 1, 2008
ARDEC, Taylor Auditorium, Fort Collins
Contact: Shane Bedwell at (970) 491-8093 or shane.bedwell@colostate.edu

**Range Beef Cow Symposium XX**
Dec. 8-10, 2008
Wyoming (specific location TBD)
Contact: Steve Paisley at (307) 760-1561

**Fall Commencement**
Saturday, Dec. 15, 2008
7:30 p.m.
Moby Arena
Contact: (970) 491-6274 or Jennifer.carter@colostate.edu

**National Western Stock Show – CSU Day**
Saturday, Jan. 17, 2009
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
3:00 p.m., Centennial Room, Third Floor Exposition Hall
Contact: (970) 491-1442 or CAS_VIP@mail.colostate.edu

**Animal Sciences Judging Teams Reunion**
Sunday, Jan. 18, 2009
The Renaissance Hotel, Denver, Colo.
Contact: Shane Bedwell at (970) 491-8093 or shane.bedwell@colostate.edu

**All-University Career Fair**
Feb. 4-5, 2009
Lory Student Center, Main Ballroom
Contact: (970) 491-3721 or www.career.colostate.edu

**Agriculture, Natural Resources, and Horticulture/Landscape Architecture Career Fair**
Wednesday, Feb. 18, 2009
Lory Student Center, Main Ballroom
Contact: (970) 491-3721 or Mary.Christensen@colostate.edu

**Calving Ease Plus 33rd Annual Bull Sale**
Saturday, March 28, 2009
Noon lunch, 1:00 p.m. sale begins
ARDEC, Taylor Auditorium, Fort Collins
Contact: (970) 491-1442

**Animal Sciences Spring Branding Banquet**
Friday, April 10, 2009
6:30 p.m.
B.W. Pickett Equine Teaching Research Center, Fort Collins
Contact: (970) 491-2450 or Shannon.Archibeque-Engle@colostate.edu

**CSU Alumni Association Distinguished Alumni Awards Banquet**
Saturday, April 18, 2009
5:00-9:00 p.m.
Fort Collins Hilton
Contact: CSU Alumni Association, (800) 286-2586 or CSUAlumni@ar.colostate.edu

**Legends of Ranching Horse Sale**
Saturday, April 25, 2009
B.W. Pickett Equine Teaching Research Center, Fort Collins
Contact: Anna Morrison at (970) 491-8509


### Publishing Information

*AG family* is a publication of the College of Agricultural Sciences. **Contributing writers:** Kris McKay and Katie Boeder (Editor), Office of Development; and James Beers, Media Relations.
**CSU Communications and Creative Services:** Bill Cotton, Barbara Dennis, Lisa Schmitz.

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