

STATE

THE MAGAZINE OF THE COLORADO STATE UNIVERSITY SYSTEM

WINTER 2018

LEARNING *en* POINTE

Partnership with
Colorado Ballet
positions students
for the future

INSIDE THE DEBUT ISSUE

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BETTER THAN I AM OR BETTER THAN I HOPE TO BE.”

– Mahalia Henschel, class of 2020
Communications major with minors in
leadership and global sustainability

Meet Mahalia. As a third-year CSU student, she dreams of using her communications education to reduce systemic inequalities among marginalized communities.

Mahalia is active in rigorous academic and community programs to maintain her five scholarships. She is a first-generation student who, like many others, relies on scholarship support to attend CSU.

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THE MAGAZINE OF THE
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CSU | CSU-PUEBLO | CSU-GLOBAL CAMPUS

ON THE COVER: Lauren Cregan, shown at the Denver Performing Arts Complex, is the first Colorado Ballet employee to take online classes toward a bachelor's degree through CSU-Global as part of a new partnership between the ballet company and the CSU System. Photo by Mary Neiberg

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LEADERS

in Biosecurity

Colorado State University helps prevent, respond to, and recover from pests and diseases that threaten our health, economy, and environment. Our researchers ensure sustainable access to food and set standards for emergency response.

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Jan Leach is a University Distinguished Professor who works to protect rice – a global food staple – from devastating diseases. Her research supports food security, while also providing important insight into critically threatening plant pathogens.



**VICE PRESIDENT
FOR RESEARCH**
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[STATE WIDE]

It's one thing to be located in a community, another entirely to be part of it. To know its attributes, its successes, and its challenges. To be a dedicated partner in seeking solutions that position communities and their citizens for the future.

The Colorado State University System and its three campuses are just such partners for the state of Colorado. Our programs and our alumni are ingrained in communities across the state, joining every day with fellow citizens, policymakers, businesses, and organizations to spark innovation, hone ideas, and improve economic vibrancy and quality of life for the people of Colorado.

At the heart of our work is a profound mission: providing access to educational excellence and opportunities that arise from it.

State magazine introduces readers to myriad ways the Colorado State University System and its three campuses – Colorado State University in Fort Collins, CSU-Pueblo, and CSU-Global Campus – work on behalf of our students, our state, its people, and the landscape we hold dear. State describes robust teaching, research, outreach, and partnerships on the Western Slope, in the Rocky Mountains, on the Front Range, on the Eastern Plains, and in the Mile High City of Denver.

Together, we make Colorado our home – and our state. ♦

Great Sand Dunes National
Park and Preserve. Photo
by Patrick Myers / National
Park Service



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Stock Show

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[STATE WIDE]

FRANK BECOMES FULL-TIME CHANCELLOR

Shift enables more focus on the CSU System and its projects

Dr. Tony Frank this summer will transition from dual roles as president of Colorado State University and chancellor of the CSU System to focus solely on his leadership role with the three-university System that encompasses the flagship campus in Fort Collins, CSU-Pueblo, and CSU-Global Campus.

The change will allow Frank to further strengthen ways the three institutions work together to serve students and the state. He also will have more time to guide increasingly robust System partnerships and initiatives from the CSU Denver Center, where the chancellor's office is based.

Foremost among these critical System initiatives is the National Western Center, which in coming years will remake the grounds of the National Western Stock Show in north Denver into a major year-round hub for events, entertainment, education, research, and agribusiness innovation. CSU is a lead partner in the redevelopment, along with the city and county of Denver, the Western Stock Show Association, the Denver Museum of Nature and Science, and History Colorado. CSU programs at the National Western Center will concentrate on health, water, energy, the environment, and food systems.

Rico Munn, chair of the Board of Governors of the CSU System, described Frank as "one of the most respected leaders in higher education today."

Large-scale projects at the System level, including the National Western Center, require Frank's full-time attention as chancellor, Munn said.

"We believe our System will benefit most if he now is able to focus on the larger issues and opportunities facing all of our CSU campuses," he said.

Dr. Tony Frank transitions to full-time chancellor of the Colorado State University System this summer. Frank is in his 11th year as president of CSU in Fort Collins; during five of those years, he also has led the three-campus System as chancellor. Photo by Mary Neiberg



"ALL THREE OF OUR CSU SYSTEM CAMPUSES ARE ON A GREAT, POSITIVE TRAJECTORY, AND THE BOARD WANTS TO ENSURE THERE IS SUPPORT AT THE SYSTEM LEVEL TO CONTINUE TO BUILD ON THAT MOMENTUM. I'M GRATEFUL TO BE IN A POSITION TO CONTINUE, I HOPE, TO ADD SOME VALUE AND MOVE OUR SYSTEM FORWARD IN WAYS THAT WILL TRULY BENEFIT THE PEOPLE AND FUTURE OF COLORADO."

—TONY FRANK

Continued



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COLORADO STATE UNIVERSITY

CHANCELLOR

Frank's transition becomes official on July 1, 2019. He will have been CSU president for more than 10 years.

As Frank anticipates a new role, CSU in Fort Collins is celebrating a number of remarkable gains under his leadership:

- The physical campus has transformed with nearly \$1.5 billion in recent construction. Enrollment during the 2018-2019 school year totals 33,877 students, with 11 consecutive years of record-breaking freshman classes.
- More than 20 percent of that population is made up of students with diverse backgrounds, a marked improvement in diversity over a decade; achievement gaps also have notably improved.
- Research activity has grown – evidenced by total campus research expenditures of \$375 million in Fiscal Year 2018 – even as overall federal research funding has declined.
- And, remarkably, CSU has surpassed its ambitious fundraising campaign goal of \$1 billion nearly two years early, with additional gains expected by the University's 150th anniversary in 2020.

Those achievements and others make this a good time to move fully into the role of chancellor, Frank said. A new president will take over in Fort Collins riding a wave of unparalleled momentum as the University enters its next era, he said.

"I really do believe this is the right move at an opportune time for our campus and the System as a whole," Frank said as he announced the move.

"Our Fort Collins campus deserves a full-time president who is deeply engaged in the life and future of this institution. All three of our CSU System campuses are on a great, positive trajectory, and the Board wants to ensure there is support at the System level to continue to build on that momentum," he said. "I'm grateful to be in a position to continue, I hope, to add some value and move our System forward in ways that will truly benefit the people and future of Colorado."

The System's Board of Governors is directing the search for a new CSU president and will hire the next person to fill the role. ♦

[STATE WIDE]

Single point of access

Castle Rock campus takes a new approach to higher education

A NEW CAMPUS AT THE MEADOWS IN CASTLE ROCK will provide a full continuum of workforce training and higher education at a single site that may be easily accessed by students in the region south of Denver and north of Colorado Springs.

Groundbreaking for the Castle Rock Collaboration Campus was in Spring 2018; the first phase of construction is set for completion in Fall 2019.

Project partners are Arapahoe Community College, the town of Castle Rock, the Castle Rock Economic Development Council, Colorado State University, and the Douglas County School District – organizations committed to making job training and higher education accessible and relevant to students, employers, and the economy broadly.

"People often use the word 'collaboration' loosely, but this campus truly is the coming together of educational entities from all levels, the community, and local employers," Diana Doyle, president of Arapahoe Community College, said.

Kathay Rennels, associate vice president for CSU Engagement, called the project "an amazing step into the future." ♦



Services expand at two centers supporting agricultural regions



Kevin Koch, Palisade, oil, 36"x24", courtesy of the artist

THE EAST ORCHARD MESA area outside Grand Junction, depicted above, is in one of two state regions that will benefit from improved and expanded Colorado State University centers now under construction. Groundbreaking occurred last fall on the Western Colorado Campus at Orchard Mesa and the Arkansas Valley Campus at Rocky Ford. Both regional centers will broaden and co-locate CSU Extension, agricultural research, veterinary diagnostics, and other services to benefit area residents. Local policy-makers and state legislators are among the partners providing critical support for improved facilities.

[STATE WIDE]

TAPPING INTO WATER SOLUTIONS

Water in the West Symposium set for a second time in Denver

Worried about water in our thirsty region? The Colorado State University System will hold its second Water in the West Symposium on March 14, 2019, to address the research, education, innovations, infrastructure, financing, policies, and collaborations urgently needed to better manage increasingly scarce water resources.

The daylong symposium in Denver will feature speakers including Gary Knell, chairman of National Geographic Partners, the global joint venture owned by 21st Century Fox and the National Geographic Society.

During the first Water in the West Symposium in Spring 2018, about 30 experts discussed critical water-related concerns for farmers and ranchers, municipalities, and a variety of industry users.

The second meeting also will dive into water concerns from a variety of stakeholder perspectives, with the aim of identifying opportunities for solution-driven action.

Ideas presented will shape work at the forthcoming CSU Water Building, the first building planned for the National Western Center, the events and educational hub that will transform the grounds of the National Western Stock Show. CSU is one of five lead partners in the redevelopment.

Information about the Water in the West Symposium is available at nwc.colostate.edu. ♦

An aerial view shows the South Platte River and Sterling Irrigation Co. Ditch No. 1. Photo by William A. Cotton / Colorado State University



THESE PATIENTS ARE VERY GOOD BOYS

Pilot project represents part of National Western Center plans

Forecasting things to come, Colorado State veterinarians and veterinary students in October teamed with other volunteers to provide free physical exams, vaccinations, and spay and neuter surgeries for about 200 dogs and cats from low-income homes near the Denver Coliseum.

The patients included Chihuahuas, Labrador retrievers, a Great Dane, and even a litter of nine mixed-breed puppies.

It was the fifth year – and the most successful to date – for the pet wellness and vaccination clinic at Focus Points Family Resource Center, in the heart of the Elyria-Swansea neighborhood. For the second time, the outreach effort offered health screenings and flu shots for people.

Access to care is the central theme for the evolving annual clinic, Dr. Danielle Frey, a CSU veterinarian and clinic organizer, said. In keeping with that focus, veterinarians and volunteers either spoke Spanish or provided Spanish translation for pet owners who preferred it.

The pet wellness and vaccination clinic represents one planned element of the National Western Center, the year-round events and educational hub that will transform the grounds of the National Western Stock Show in north Denver. Colorado State University, a lead partner in the redevelopment, plans to host a small-animal veterinary clinic on site, with pets from underserved neighborhoods forming its target patient population.

Even as the permanent clinic provides low-cost veterinary care, it will give CSU veterinary students opportunities for hands-on service learning – much like the annual pet wellness and vaccination clinic held each fall.

“It’s been really cool to speak my first language and to practice what I love to help pets and families. It’s a really cool learning experience,” Stephanie Cruz Castro, a CSU veterinary student from Puerto Rico, said between patients at the outreach event. She was among 15 students, eight veterinarians, and 40 total volunteers at the daylong clinic.

Growth of the pilot project at Focus Points suggests the long-term plan will meet a significant need: Available veterinary appointments were quickly filled, and volunteers saw walk-ins until they ran out of vaccinations. Meantime, volunteers who weren’t working on dogs and cats led pet-care sessions for kids.

CSU veterinary student

Kayla Gravelle helps provide free pet care during the fifth annual Focus on Health Community Clinic in north Denver. Photo by John Eisele / Colorado State University

ly filled, and volunteers saw walk-ins until they ran out of vaccinations. Meantime, volunteers who weren’t working on dogs and cats led pet-care sessions for kids.

“It’s really very helpful,” Lucrecia Escobedo said of the clinic, after a veterinary team gave her Boston terrier, Vaquero, rabies and distemper vaccinations and checked one of his ears for infection. “Some other vets are too expensive for us to afford, so this helps a lot.”

The Dumb Friends League, headquartered in Denver, was a key partner in the outreach clinic and conducted spay and neuter surgeries during the event. Pet patients needing more attention were referred to the organization’s veterinary hospital, Solutions, which offers care for underserved populations.

Metro Denver CAT and the Street Dog Coalition also helped with veterinary care, while the nonprofit Clínica Tepeyac administered flu shots and health screenings for dozens of people.

“It is heartwarming to be part of a team of organizations providing access to care and resources in a neighborhood that faces a number of barriers every day,” Frey said. ♦



SHINING ON A NATIONAL STAGE

Student wins top honor from Boys & Girls Clubs of America

A CSU freshman from Denver recently won the Boys & Girls Clubs of America National Youth of the Year award in honor of outstanding leadership, service, academic excellence, and dedication to living a healthy lifestyle. In the process, he exemplified the purpose of a key University partnership.

Malachi Haynes, 18, accepted the award at a celebration in Washington, D.C., cheered by supporters including actor Denzel Washington, the organization’s national spokesman.

Haynes rose to the national stage after earning state and regional honors and will receive as much as \$100,000 in scholarship support for the national award. He is majoring in health and exercise science on the Fort Collins campus.

“Malachi is truly a role model who has transformed adversity in his own life into a passion for serving and inspiring others,” CSU President Tony Frank said.

Colorado State University and Boys & Girls Clubs of Metro Denver maintain an official partnership designed to encourage and support students like Haynes. The partnership, based on shared missions of educational access and opportunity, provides annual trips to campus for dozens of high schoolers and offers scholarships for students from the Denver and Larimer County clubs.

“CSU is a proud partner with the Boys & Girls Club because of the opportunities they create for young people to discover and cultivate the best in themselves and then to give back to others,” Frank said. “Malachi embodies that spirit and the CSU mission of service and lifelong learning. We are so pleased to see him recognized for all he has achieved.” ♦

Malachi Haynes, who received a national honor from the Boys & Girls Clubs of America, exemplifies the partnership between CSU and the nonprofit’s branch in Metro Denver. Photo courtesy of Boys & Girls Clubs of America

THE SCIENTIFIC METHOD

School partnership STEMs from nearby National Western Center

Set up 100 homemade science experiments demonstrating the wonders of light, sound, electricity, magnetism, pressure, and waves.

- Add a gym full of schoolkids. What do you get?

Whoa!
What?!
Look!
Cool!
Can I try?



The Little Shop of Physics, one of Colorado State University's popular outreach programs, recently visited Bruce Randolph School in north Denver to excite kids about science. The day, designed for Bruce Randolph students and many more from local elementary schools, helped prove that science is fun and interesting.

But there was another motive: to put students elbow-to-elbow with the University and the future learning it represents.

"One of our challenges is getting students invested in attending college," said Roland Shaw, assistant principal at Bruce Randolph School, which encompasses grades six to 12.

"If we can get students to believe earlier that college is an option for them, then we'll set them up for ultimate success."

Bruce Randolph, with a population composed almost entirely of students of color from low-income homes, has tested many hypotheses during the past decade as it has successfully reversed its dire graduation rates. Last spring, all seniors in the school's class of 2018 earned their high school diplomas, and the vast majority were ready to continue on to college without remediation, Shaw said.

Colorado State, with its land-grant mission of providing access to educational excellence, has committed to helping Bruce Randolph prep stu-

Sixth-graders at Bruce Randolph School in north Denver dive into hands-on science experiments during a recent visit by CSU's Little Shop of Physics. Photos by John Eisele / Colorado State University

dents for the next step. That commitment has taken programmatic shape as the University has become a lead player in building the nearby National Western Center. The proximity of the school to the redevelopment project, which will establish a major year-round hub for events and education, has opened the door to a new partnership.

But Yma Muñoz, a fourth-grader from Swansea Elementary School, didn't know or care about all that while absorbed in an experiment called "Tesla's Lava Lamp." A Tesla coil inside the lamp radiated electric and magnetic fields into a darkened room off the Bruce Randolph gym.

"The power's on!" the girl exclaimed, as she held a lightbulb close to the wireless energy source, causing it to illuminate, as if by magic.

"That's cool. The air around it is electric," she observed.

As Shaw noted, "When students have fun, learn, and associate it with college, you've got a slam-dunk." ♦



HEAD, HEART, HANDS, HEALTH

4-H leader in Kiowa celebrates 50 years and joins an elite group of volunteers

Betty Hood was marshal of the 2018 Elbert County Fair parade in recognition of her 50 years of volunteerism as a 4-H leader. She was joined in the grand marshal's car by Terry Gale, driver; CSU President Tony Frank, rear seat, driver's side; and Mark Trostel, former chief of the Colorado State Patrol. Photo courtesy of Ranchland News



Over the years, Betty Hood has taught hundreds of 4-H kids how to sew on buttons, design quilts, grow vegetables, and can tomatoes.

Hood has been a volunteer leader of the Kiowa Community 4-H Club in Elbert County, southeast of Denver, for 50 years.

That's a remarkable level of dedication to anything — especially a volunteer undertaking that often amounts to a full-time job managing kids, their skills acquisition, and their development as citizens.

In August, Hood joined an elite group of vol-

unteers with 50 or more years invested in the Colorado 4-H program.

How elite? Well, Colorado 4-H has more than 11,000 total volunteers working across the state, and 23 have reached the 50-year mark.

"It's amazing," said Jean Glowacki, state 4-H program director with Colorado State University Extension. "I think our volunteers are motivated mostly because they know they're making a difference in the lives of young people."

Hood became a 4-H leader through her three children: They joined the Kiowa Community 4-H Club, and she soon became a project leader to support her kids and others.

As a project leader, she helped 4-Hers with home economics projects — mainly sewing, gardening, and canning. Then she rose to leadership of the entire club.

Through the years, its membership has ranged from 60 to 120 young people, ages 8 to 18; their 4-H projects involve livestock, horses, home economics, health and science, pet care and training, leadership, arts, and more.

Hood now works with a second generation of 4-H youth — the children of her earlier charges — and she's tickled to see the resurgence of classic home economics projects, such as gardening and sewing, whose renewed popularity is fueled by the locavore and maker trends.

"Hundreds of 4-H youth over the past 50 years have been nurtured, scolded, encouraged, guided, and loved by a remarkable and talented soul — a soul who has poured her heart and energy into making the best better for our youth, our families, our community, and even our world," Ben Duke, a fellow 4-H leader, wrote of Hood in an Elbert County newsletter.

Hood also is a charter member of the Elbert County 4-H Leaders' Council and was Outstanding 4-H Adult Leader in Colorado in 2006-2007.

"4-H is something I believe in," she said, "because it's useful to kids." ♦

ENTREPRENEURIAL SPIRIT

University supports business growth at Denver Startup Week



Denver Startup Week is the world's largest free entrepreneurial gathering, and Colorado State University was a key contributor and first-time title sponsor at the Fall 2018 event that brought together nearly 20,000 people to learn about and discuss innovations and business opportunities.

The University's involvement is a reflection of its efforts to help build Colorado's culture of innovation, said Scott Shrake, director of the CSU Institute for Entrepreneurship.

To that end, faculty from the Fort Collins and Global campuses helped kindle the entrepreneurial spirit through a record number of panel discussions and presentations at the sixth annual event in downtown Denver; opportunities in energy and food were among the topics. In addition, CSU students attended the Denver Startup Week job fair, and campus sustainability experts helped reduce event waste.

In a first-time partnership, CSU journalism students interviewed participants and produced news stories published in *ColoradoBiz* magazine. ♦

Journalism students Annemie Isles, left, and Haley Dean report on Denver Startup Week as part of CSU's partnership in the annual event. Photo by William A. Cotton / Colorado State University

Acting, singing, dancing

Kids master “triple threat”
at CSU Todos Santos Center

KIDS DO IT ALL, a cross-cultural musical theater camp, recently celebrated its fifth year at the CSU Todos Santos Center, illustrating how the University’s flourishing educational programs in Baja California Sur are helping shape scholars into global citizens while also contributing to the coastal Mexican community.

The Todos Santos Center, a key initiative of the CSU System, opened in 2015 to advance international teaching, research, service, and educational exchange. Its programs have grown to involve many CSU academic units and Mexican partners.

Kids Do It All was among the first CSU programs established in Todos Santos. Led by the School of Music, Theatre, and Dance, it is modeled on musical theater camps in Fort Collins.

The camp in Todos Santos enrolls children from both Colorado and the community in Mexico; each year, more than 50 youngsters ages 7 to 13 have joined the immersive bilingual and bicultural camp. CSU students work as camp counselors, gaining valuable insights through international and experiential learning.

In Summer 2018, the camp involved local educators for the first time – a vital step toward the broad goal of educational exchange, said Gabriela Ocádiz, artistic director for Kids Do It All in Todos Santos.

Like its sister camps in Fort Collins, the Todos Santos camp immerses youngsters in creating and performing their own plays; they learn about movement, voice, song writing, set design, and other skills. Language and cultural literacy are a central component of the camp in Mexico. ♦

A musical theater camp called Kids Do It All, started by the CSU School of Music, Theater, and Dance in Fort Collins, expanded five years ago to the University’s campus in Todos Santos, Mexico.
Photo by Carlos Aguilera Calderon





Learning Portraits

Partnership *encourages* careers in arts and culture

Like many suburban kids, Lauren Cregan started taking gymnastics and dance as a preschooler. After a few years, her little-girl delight with tumbling and movement became a preoccupation with ballet. A leotard was her second skin, and visions of the Sugar Plum Fairy danced in her head. By the time she was 10 years old, Cregan said, “I knew I wanted to dance professionally.”

So began a decade whose contours are familiar to serious young athletes and their families. Cregan, who grew up in Wheaton, Ill., split much of her time between school and the dance studio, with homework and dinner scheduled exactly in between. She trained under a ballet master and mistress from Russia. She performed children’s roles in productions of *The Nutcracker*, danced in audition-only summer intensives in New York and San Francisco, and twice reached the finals of the Youth America Grand Prix, a competition for rising world-class dancers. Cregan graduated from high school a year early to join the pre-professional company at the Houston Ballet and, later, moved to an equivalent company at Colorado Ballet in Denver. She was on her way.

But Cregan’s years in toe shoes and tutus ended as she rounded the last rigorous turn toward her girlhood goal. She developed an autoimmune disorder called Hashimoto’s thyroiditis, which arises with symptoms including exhaustion, weight gain, muscle aches, and dizziness, then progresses to hypothyroidism. As Cregan struggled with full-blown thyroid disease, she realized her path to health must veer away from the demands of dance. “I couldn’t do it anymore,” she recalled. “I wasn’t happy. I wasn’t healthy. I wasn’t dancing my best.” At age 19, she changed course.

Five years later, Cregan is working in a completely different role at Colorado Ballet – managing donations data for one of the state’s best-known performing arts organizations. In October, she became its first employee to take classes toward a bachelor’s degree through Colorado State University-Global Campus as part of a new partnership between the ballet company and the CSU System. The alliance provides uncommon opportunities for CSU dance and design students, who are learning from the pros at Colorado Ballet, while also offering flexible college education at reduced rates for company employees, such as Cregan, who want to expand their skills in the arts or pirouette to new careers. [Read more about CSU-Global on Page 51.]

Amy Parsons, executive vice chancellor of the CSU System, helped establish the partnership to open new doors to arts exposure and learning. The CSU System and Colorado Ballet share educational missions, she noted, so collaborating extends the reach of both. That’s important for individual students whose educational and career opportunities are expanding as a result of the partnership. More broadly, boosting students in the arts adds to a thriving cultural sector with significant economic impact. The Economic Activity Study of Metro Denver Culture, released in November by the

Students in a dance seminar at Colorado State University, previous spread, join class with Colorado Ballet professional dancers. Facing page: Francesca Martoccio, a Colorado Ballet company dancer, in class with the Denver skyline as her backdrop.

BY COLEMAN CORNELIUS PHOTOGRAPHY BY MARY NEIBERG





Lauren Cregan, above, manages charitable-giving data and is the first Colorado Ballet employee to take classes toward a bachelor's degree as part of a new partnership with the Colorado State University System. At left: Colorado Ballet company dancers begin class with stretching and exercises at the barre.



Regan Kucera, in the corps de ballet, leaps through the Colorado Ballet's main studio as company dancers and visiting CSU dance students observe. During a daylong visit to company headquarters in Denver, Colorado State students danced alongside professionals, toured studios and the costume department, and learned about a variety of career opportunities in dance.

Colorado Business Committee for the Arts, reported total economic activity of \$1.9 billion in the region in 2017. That record-breaking level of activity comprises direct and indirect spending from operations, audiences, and capital projects among arts, culture, and scientific nonprofits in the Denver Metro area.

Colorado Ballet is a well-known player in the sector. The company, with a \$9 million annual budget, employs dozens of dancers and administrative staff members; stages five major dance productions annually, yielding more than \$4.5 million in total ticket sales; trains about 1,500 dancers through ongoing academy offerings; and reaches an estimated 35,000 children and adults per year through educational outreach programs up and down Colorado's Front Range, said Adam Sexton, development director for Colorado Ballet.

Dance matinees for schoolkids at the Ellie Caulkins Opera House, in the Denver Performing Arts Complex, are just the beginning of that educational outreach. The company's education staff, with support from the city's Scientific and Cultural Facilities District, recently designed and delivered a lesson plan using movement from classical ballet to teach third-graders about the water cycle. Imagine learning about evaporation, condensation, and precipitation through dance. "We took the concept of flow from dance and related it to the water cycle. It's a fun and engaging approach for students, especially kinesthetic learners," said Cassie Wilson, an education programs manager. She and coworkers have incorporated dance into classroom lessons teaching vocabulary, physics, and human anatomy, among other subjects.

Cregan, the new CSU-Global student, likewise is applying her knowledge of ballet to an unexpected discipline. As she works full time in the Colorado Ballet development office, tracking charitable giving in the nonprofit's database, she is taking classes to earn a bachelor's degree in management information systems and business analytics. Like other CSU-Global students, she's immediately applying course work to her blossoming career. It's been tough coming to terms with her new path, Cregan said, yet she is increasingly excited to realize that a career in professional dance can take an entirely different – and equally rewarding – form. "I've stopped introducing





The CSU System and Colorado Ballet share educational missions, so collaborating extends the reach of both. That's important for individual students whose educational and career opportunities are expanding as a result of the partnership.

myself as a former dancer," she said. "I don't want to forget dance, because it made me who I am. But I've realized that I have a brain for databases, and I'm learning something new every day. Being able to start work on a bachelor's degree is the perfect opportunity. It's exactly what I need."

The partnership has two other key aspects. In one, about 30 students majoring in apparel and merchandising at CSU were tasked in November with designing dance costumes for children performing in an upcoming production of *Giselle*, staged by the Colorado Ballet Academy.

The design project, for a class in apparel illustration, required a research paper delving into the dance production and its setting in the German Rhineland of the Middle Ages. Students would produce fashion illustrations, providing information about suggested fabrics, sourcing, and construction details. To keep it real, they would consider issues including budget and the wear and tear on garments worn multiple times by dancers ranging in age from 4 to 14. "You'll want to think about fabrics and function. These kids have to be able to dance in them," Kevin Kissell, senior instructor in the CSU Department of Design and Merchandising, told his students as he assigned the project. The costume designer and wardrobe manager for Colorado Ballet Academy would be among those critiquing the student projects – and the best among them will be produced during an apparel fabrication class in the spring. "It's an amazing opportunity," sophomore Mikayla Zagrocki said, moments after Kissell described the assignment. "It will be fun illustrating these costumes, and even more fun to actually create them."

In another aspect of the partnership, Madeline Harvey and Amber Mazurana, faculty in the CSU School of Music, Theatre, and Dance, recently led 11 dance students from Fort Collins on a daylong trip to Colorado Ballet for an inside look at career opportunities. Most in the group hope to dance professionally. Their instructors encourage those aspirations, yet also know dancers – following the arc of most professional athletes – typically have short careers on stage and are best served by an expansive view of work in the performing arts. That might mean artistic direction,

Continued on Page 55



Facing page: Mackenzie Dessens, a corps de ballet dancer, practices in class with visiting CSU dance students. Above: Corps de ballet dancers Ariel Breitman, left, and Sean Omandam, right, leap in synch during daily class at Colorado Ballet. Taking class with professional dancers "was a challenge," said Abbey Mann, a CSU freshman majoring in dance. "It was inspiring."



HEART DOC AT HIGH ALTITUDE

VETERINARIAN WORKS TO IMPROVE CARDIOVASCULAR
HEALTH IN COLORADO CATTLE

Dawn revealed the fall splendor off Last Dollar Road outside Ridgway in October. The Sneffels Range pierced the morning sky with jagged beauty, its peaks brushed with snow. The season's last golden leaves clung to aspen trees. And a ranch hand on horseback gathered a group of Angus cows and calves from the high country, slowly pushing the herd through a sweeping mountain meadow and into a series of tidy corrals.

The scene was so iconic, so perfectly Colorado, that it would have been easy to overlook a potential problem — a potentially lethal problem — in the hearts of cattle here. The setting at 9,370 feet above sea level offered a clue, as did the veterinarian unpacking equipment nearby.

BY COLEMAN CORNELIUS

PHOTOGRAPHY BY ALEC JACOBSON

Rancher Thelma Starnier, below left, records PAP testing data alongside her daughter, Vicki Ripp, at the family's Cradle Park pasture above Ridgway. Facing page: Laurel Sundberg, a student in CSU's Doctor of Veterinary Medicine Program, confers with Dr. Tim Holt as they test cattle for high-mountain disease.



“This is a very important day. This is when I find out what I can sell and what I can sell it for. A lot gets decided today,” rancher Mike Ripp said, as he leaned on a corral fence observing nearly 40 mother cows and their 9-month-old calves. The forecast he sought would come from medical insights into the heart health of his cattle.

Dr. Tim Holt, the veterinarian delivering those critical insights, was setting up inside a shed: needles, syringes, catheters, disinfectants, pressure transducer, medical monitor. Holt, an associate professor of livestock medicine at Colorado State University, is the world's leading expert on a form of cardiopulmonary disease that afflicts cattle at high altitudes. He spends 11 months a year touring the West, with stops at 150 ranches in Colorado, Wyoming, Montana, and Idaho, to test cattle for indications of disease. Through the years, he has pierced the jugular veins of more than 360,000 cattle to probe arteries coursing from their hearts into the tiny arterioles of their lungs.

UNLIKELY EXPERT

Holt doesn't at first seem like an internationally respected heart and lung doctor, with his well-worn coveralls, stained Denver Broncos cap, tattoos of pet basset hounds, and stream of side-splitting stories about earlier days as a country veterinarian.

But he is deadly serious about bovine high-mountain disease. It is a fatal disease caused by pulmonary arterial hypertension, or dangerously high blood pressure in vessels that run from the right side of the heart into the lungs. Pulmonary hypertension triggers a cascade of health effects, resulting in congestive heart failure. The condition is seen in people, too, and it has the same health consequences if untreated. But in cattle, pulmonary hypertension is most often sparked by lower oxygen levels found at elevations above 5,000 feet. Without breeding programs designed to avoid it, high-mountain disease may strike 5 percent to 20 percent of cattle raised in high-country settings, Holt said, and there is little way to treat animals once disease sets in. The problem

can occur at much higher rates – and at much lower elevations – in susceptible cattle.

During end stages of disease, body fluid pools and causes swelling in the lower chest cavity, or brisket, of sick cattle, giving the illness its common name, “brisket disease.” As tissues lose fluid, dying animals become thirsty and often are found standing near water tanks, ponds, or streams in the throes of irreversible heart failure. “It's a terrible disease,” Holt said.





Mike Ripp grazes cattle in the San Juan Mountains of Colorado and tests bull calves for high-mountain disease. He markets calves with favorable scores, indicating genetic resistance to disease, as having an “altitude advantage.”

To understand the significance of high-mountain disease in Colorado, consider the state’s mean elevation: 6,800 feet. That’s the highest average among the 50 states, and it puts cattle raised virtually anywhere in Colorado, especially in mountainous areas, at potential risk for developing cardiopulmonary disease. Yet other state attributes, such as a beneficial climate and prevalence of grazing lands, make Colorado an ideal setting for cattle production. In fact, the cattle sector generates nearly \$3.5 billion in cash receipts each year in Colorado, making it by far the most important sector in the agricultural industry, a foundational part of the state economy.

So pinpointing a proclivity to high-mountain disease is a top priority among cattle ranchers in Colorado and other Western states. That’s where Holt comes in. His expertise in high-mountain disease makes him a frequent guest speaker at beef industry meetings. In June 2018, he received the prestigious Pioneer Award from the national Beef Improvement Federation for “immeasurable contributions to our understanding of bovine pulmonary hypertension.”

THE GOLD STANDARD

Holt is widely known for perfecting the pulmonary arterial pressure test, known as the PAP test, into the gold standard for predicting high-mountain disease in cattle. “This is a human procedure. We just stole it,” he said. “Even in human medicine, this is the test of choice for diagnosing pulmonary hypertension and its prognosis.” With the test, Holt can



decipher workings of the telltale heart. He does that work, in mud, blood, and manure, for more than 8,000 bovine patients per year.

Over the course of 35 years, Holt and veterinary colleagues have determined how best to administer the PAP test in cattle, how to interpret results, and, most important, how to use test data as a deciding factor in cattle breeding. Susceptibility to high-mountain disease is inherited, so reliable data from PAP testing indicate not only whether an individual animal is likely to develop the disease, but whether the same animal is likely to pass on a predisposition to offspring. Tracking PAP scores through generations, and consistently breeding cows and bulls with advantageous scores, can nearly eliminate high-mountain disease in herds, Holt has found. That’s good for animal health and the economy.

“In this area, it’s incredibly important to know the genetics of your cattle,” said Laurel Sundberg, a CSU veterinary student who accompanied Holt on part of his testing tour. “It’s also a welfare issue. As veterinarians, we’re helping ranchers select cattle that will do well at this altitude.”

Ripp, who grazes cattle in the mountains outside Ridgway, has hired Holt for 21 years running to administer the PAP test in registered Angus bull calves that will be sold as herd sires for other ranches. Young bulls with impressive scores – indicating less likelihood for acquiring and passing on disease – have an “altitude advantage” and sell for up to \$2,000 more, or \$5,000 total, compared to those with average scores, he said. “The ranchers who run cattle at high altitudes will pay more for the reliability of bulls tested up here,” said Ripp, who is president of the Western Colorado Angus Association.

Eager to hear test results in October, Ripp manned the head catch of a squeeze chute

Holt points to a monitor showing blood-pressure wave forms as he tests the pulmonary arterial pressure of a bull calf. Following spread: Ranch hand Brian McCulloch accounts for cattle to be PAP tested for high-mountain disease.





Above: Holt teaches Sundberg how to properly puncture the jugular vein for PAP testing in cattle. Over the years, he has used the procedure to test about 360,000 cattle for high-mountain disease.

as 38 bulls passed through for PAP evaluation. His ranching partners – wife, Vicki, and mother-in-law, Thelma Starner – sat in camp chairs close by, logging scores that would guide decision-making about how to pair cattle during the next breeding cycle. The scores would also help dictate which bulls to market as herd sires and how to price them. Bulls that didn't make the cut would get the cut: They would be castrated and sold as lower-value steers to be finished for market, ultimately routed to the meat counter.

Holt, with help from Sundberg and longtime veterinary technician Lisa Herrick, scrubbed the neck of a patient with chlorhexidine and, with gloved fingers, palpated for the jugular vein. Then, with one lightning-fast stroke, Holt pierced the animal's jugular with a 3.5-inch-long, large-bore needle, producing a single spurt of blood. The bull didn't flinch. Holt then threaded a sterile catheter through the needle and into the animal's jugular vein, on to the right atrium of the heart, the right ventricle of the heart, and finally into the pulmonary artery for the decisive reading. He used nearly 3 feet of thin, flexible catheter tubing to reach the target.

A pressure transducer, a key instrument in the testing system, detected fluid pressure exerted on the catheter and converted that pressure into an electrical signal, producing wave forms and blood-pressure scores on a medical monitor. Holt watched the monitor intently as he nudged the catheter forward. "Every part of the blood system has a distinct wave form," allowing him to follow the catheter's progress to the heart, he explained. Holt and the ranchers hovering nearby were keen to identify bulls with PAP scores less than 41 mmHg, indicating genetic resistance to high-mountain disease.

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Moussa Diawara, chair of the Biology Department at CSU-Pueblo, usually researches the public-health risks of lead exposure from historic smelting activities in Pueblo. But when he teaches science students about the Oklahoma brown tarantula, the professor said, "I always think, 'You know what? I'm going to start studying tarantulas.' They're so interesting."



TARANTULAS

SCIENCE STUDENTS
ADVOCATE FOR
ARKANSAS VALLEY
ARACHNIDS

IN A STATE KNOWN FOR NATURAL BEAUTY, EVERY REGION HAS A TRADEMARK ANIMAL, A WILD SPECIES THAT UNIQUELY REFLECTS THE LOCAL LANDSCAPE AND IS GENERALLY PRIZED BY ITS PEOPLE. THE LARK BUNTING, THE STATE BIRD OF COLORADO, FLITS ALONG FENCE LINES ON THE EASTERN PLAINS. MOOSE SAUNTER ACROSS NORTH PARK. MOUNTAIN GOATS SPRING AMONG BOULDERS ON THE CONTINENTAL DIVIDE. LYNX PAD THROUGH SOUTHWESTERN COLORADO, THEIR SLIGHT POPULATION RISING AND FALLING WITH THE SNOWSHOE HARE.

And the Arkansas Valley? It's crawling with arachnids – namely *Aphonopelma hentzi*, the Oklahoma brown tarantula.

Each fall, mature males emerge from their burrows and creep around southeastern Colorado, huddling at times under prickly pear cactus, scuttling at times across remote roadways, and spotted at times on golf courses, soccer fields, and sidewalks. As surely as bull elk fill the autumnal meadows of Rocky Mountain National Park with eerie bugling – and for the same reason – male tarantulas crawl searchingly through rabbitbrush on the prairie.

Because it's mating season.

The male tarantula doesn't possess the majesty of the bull elk that helps make Estes Park a tourist mecca. But science students at CSU-Pueblo are here to tell you southeastern Colorado did *not* draw the short straw with its characteristic creature.

"Tarantulas are so cool. I'd like to see people respect them," Sarah Lira, a chemistry major in the CSU-Pueblo Honors Program, said.

Lira is a student ambassador at CSU-Pueblo, and she often leads campus tours for prospective students and their parents. During these outings, Lira touts the tarantula as a captivating aspect of the campus that sits on a bluff above the Arkansas River several miles from down-

town Pueblo. It's not uncommon to see a tarantula skirting an open expanse as summer cedes to fall. But don't worry, Lira assures visitors, sightings are intermittent, and the spiders are not harmful to people.

"It's one of my engagement points when I talk to students because it's one of the unique things they might experience here," said Lira, a junior on a pre-veterinary track. "Not having a city impede on you allows you to see the wildlife around us, and tarantulas are part of what you might see. It's cool being on the outside of the city because you get to experience the prairie. It's an opportunity for discovery."

When Lira gives visitors her spider spiel, "it takes them a minute to process it," she admitted. "Then they're like, 'OK, that's cool.'"

It didn't take a sales pitch to interest Keythur Merchant in tarantulas. A junior in wildlife biology, Merchant grew up collecting spiders and snakes in southeastern Colorado. He is working to establish a CSU-Pueblo bug zoo that would offer educational outreach to local schoolkids who might become enamored of arthropods and science, just as he is.

The phrase "tarantula migration" is a misnomer for the spider's fall wanderings in southeastern Colorado. Male tarantulas spotted in the region are looking for love; they crawl by ones, not in groups, during mating season.



BY COLEMAN CORNELIUS PHOTOGRAPHY BY MARY NEIBERG



Diawara observes as several of his science students scout for Oklahoma brown tarantulas on the edge of the CSU-Pueblo campus. Students describe the Arkansas Valley's characteristic critter as a fascinating reflection of the prairie landscape.



“NOT HAVING A CITY IMPEDE ON YOU ALLOWS YOU TO SEE THE WILDLIFE AROUND US, AND TARANTULAS ARE PART OF WHAT YOU MIGHT SEE. IT’S COOL BEING ON THE OUTSIDE OF THE CITY BECAUSE YOU GET TO EXPERIENCE THE PRAIRIE. IT’S AN OPPORTUNITY FOR DISCOVERY.”

—Sarah Lira, CSU-Pueblo student

As he walked to zoology class in early October, Merchant plucked a tarantula from a campus sidewalk and delivered it to a terrarium in the Biology Department for study and discussion.

“I see them as puppies,” Merchant said, as he peered into the terrarium with fellow science students. “The tarantula has fur, so it’s kind of like a little pal, a companion. I’m like, ‘Come here, buddy, I want to be your friend.’”

The Oklahoma brown tarantula is moderately sized, as mature tarantulas go. Still, with a leg span about 4 inches in diameter, this is no itsy-bitsy spider. The males cruise from their burrows only when sexually mature, typically at 7 to 10 years old. They have one final purpose – to procreate – and they are drawn by pheromones emitted from females huddled in their own burrows, Professor Moussa Diawara, chair of the Biology Department at CSU-Pueblo, explained.

The fall phenomenon is often called a tarantula “migration,” but that’s a misnomer for the male’s mating-season walk-about. The spiders don’t troop en masse in a single direction, but wander by ones to find their mates.

As his students examined the tarantula in its glass enclosure, Diawara said laughingly, “He was seeking love. We shouldn’t have disturbed him.”

Unlike other spider species, the professor explained, the tarantula spins its web not to ensnare but to detect the movement of prey, chiefly insects, such as crickets, beetles, and grasshoppers. The tarantula ambushes its prey, injects it with immobilizing venom, liquefies its body with digestive enzymes, and then slurps the meal like soup.

The female’s web, at the entrance to her burrow, is also the screen door upon which a male may come a-knocking during mating season – signaling her emergence for breeding.

“I think they’re fascinating from a scientific standpoint,” said Morgan Mohalla, a biology student with his sights set on medical school. “They’ve got eight legs, fangs, a hairy butt, spinnerets, and they have to molt to grow.”

The Oklahoma brown tarantula is considered a docile spider (unless you’re a cricket). It is unlikely to bite when gently handled by people. But if it comes to that, the bite is akin to a bee sting, Diawara said. More



Facing page: A scouting expedition during tarantula mating season turned up a single spider; held in turn by Diawara and students, from left, Keythur Merchant, Sarah Lira, and Kaitlin Diodosio.

problematic is its defense mechanism: The tarantula ejects barbed abdominal hairs, called urticating hairs, when it feels threatened. The effect is like pepper spray in the eyes and sensitive facial tissues of potential predators.

But this is a romance, and the male tarantula is a sympathetic protagonist, even with nasty table manners and fly-away hair. That’s because our arachnid’s uncertain journey, if successful, ends with fruitful coupling and death. While a female tarantula might live to be 25, the male enters a steep and ultimately fatal decline after mating. He stops eating and essentially withers away.

The reasons are unclear, but are surely tied to species survival, Diawara told his students. “I’m good – my life is done,” he summarized, speaking for the spider.

After an introductory tarantula talk last fall, Diawara and five students set out to scout for spiders on the CSU-Pueblo campus. The outing occurred at dusk during the height of tarantula mating season, a promising time to find one of the nocturnal creatures. Still, it took focused hunting to find a tarantula.

“Oh, I found one,” exclaimed Lira, the pre-vet student, peering into brush at the edge of a parking lot. But the furry body she spotted was a complete tarantula exoskeleton, shed during molting and locked in a spidery stance.

A few minutes later, Merchant, the aspiring wildlife biologist, spied a tarantula amid cactus and sagebrush. He scooped it up, and his classmates gathered around as Merchant let the tarantula creep along his forearm. He plopped the creature on his jawline to demonstrate its friendliness, and the tarantula crawled agreeably down Merchant’s neck and shoulder.

Kaitlin Diodosio, a junior in biochemistry, anxiously cupped her hands to receive the tarantula from her friend, and she was entranced as it moved with soft pitter-patter steps over her palms, into those of a classmate, and back again. She had joined the excursion to learn about the Oklahoma brown tarantula and to overcome her trepidation. “I thought, ‘What better way to get over my fear?’” Diodosio said.

She gazed at the fuzzy creature in her hands, ready to release the tarantula back to its romantic quest. “I’m sorry if I scared you, little spider,” she said quietly. ♦



HOW TO CSU-GLOBAL BREAKS GROUND BY PROVIDING SUCCEED IN FULLY ONLINE, CAREER-FOCUSED DEGREES BUSINESS

BECKY TAKEDA-TINKER HAS THE ENERGY AND ENTHUSIASM of someone with lots to accomplish, and a clear understanding of her work's importance.

She is president of Colorado State University-Global Campus, the nation's first fully online public university with accredited degree programs. CSU-Global launched in 2007 to meet a growing need for high-caliber education delivered in a flexible format for working adults seeking career advancement.

CSU-Global entered the online sphere adhering to the academic standards and financial accountability demanded of public universities. In its first decade, the school has experienced explosive growth: Its first cohort of graduates, in 2009, numbered just 14. Since then, more than 17,000 students have graduated, and more than 19,500 are currently enrolled in programs that provide certificates, bachelor's degrees, and master's degrees. Forty percent of current students live in Colorado, with others residing across the nation and around the world. Earlier this year, CSU-Global ranked No. 9 on the list of "Best Online Bachelor's Programs" released by *U.S. News & World Report*.

Like the University she leads, Takeda-Tinker's pace is quickening. She oversees an institution with an annual budget of \$105 million. She directs efforts to evaluate learning outcomes and improve technologies for online course delivery. She consults with policymakers and joins forces with community colleges on issues such as credit transferability. She also works closely with the business community to understand and address critical workforce issues, helping to tailor education and training programs for hundreds of organizations nationwide. [Colorado Ballet is among many partner organizations whose employees may take CSU-Global classes at a discount; read more on Page 24.]

Becky Takeda-Tinker, the first president of CSU-Global Campus, works in the University's administrative offices in Greenwood Village. In just 11 years, the school's enrollment has mushroomed to nearly 20,000 total students. Photo by John Eisele / Colorado State University

This work earned her a place among "Five Higher-Ed Leaders to Watch in 2018," a list compiled by the industry news outlet *Education Dive*. Takeda-Tinker has emerged as an important figure concerned with reimagining higher education for busy adults seeking degrees with immediate workforce relevance.



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CSU GLOBAL

Here, she discusses CSU-Global, the significance of its programs, and what's ahead for the trail-blazing online university.

STATE: When CSU-Global began, it admitted only students with some college credit, who had left higher education before attaining their degrees and were returning for degree completion, typically with specific career goals in mind. Why did – and does – this population stand out?

TAKEDA-TINKER: These nontraditional learners are known in education circles as having “some college, no degree,” and they are a tremendous resource in our country. A study in 2014 estimated that 31 million people are in this category. Effectively helping these working adults reach educational goals, demonstrated by certificate and degree attainment, provides them with vastly improved opportunities for career advancement, lifelong earnings, and quality of life.

We know from numerous studies that, generally speaking, the more you learn, the more you earn. One recent analysis shows that a graduate with a bachelor's degree earns, on average, \$1 million more over a lifetime than someone with a high school diploma.

You can guess the importance of degree completion for businesses and the national economy, especially since we've become a knowledge economy. When we upscale workers with career-relevant education, we are meeting urgent needs

“WE'RE VERY INTENTIONAL ABOUT OFFERING PROGRAMS THAT FACILITATE WORKPLACE SUCCESS. WE HAVE 26 DEGREE PROGRAMS AND ABOUT 50 SPECIALIZATIONS AND CERTIFICATE PROGRAMS.”

– BECKY TAKEDA-TINKER

in workforce development and helping the country to maintain and improve its competitiveness. Americans seeking to complete their degrees have even been called “economic super fuel.”

STATE: How has your student population changed since CSU-Global launched 11 years ago?

TAKEDA-TINKER: The average age of our students is 35, and nearly 70 percent are in our original core population of nontraditional learners coming in with some college credit and seeking to complete bachelor's degrees for success in a global marketplace. About 30 percent of our students are seeking master's degrees.

Over time, we've discovered that many younger students, with no previous college experience, also want the flexibility of fully online, asynchronous learning. These students reflect a societal trend in individualized services, and they want a customized, online learning experience. For this reason, the Colorado General Assembly passed legislation in 2016 allowing us to admit first-time freshmen from states outside Colorado. Earlier this year, again with legislative ap-

proval, we began admitting first-time freshmen from Colorado.

Fully online education doesn't work for everybody, but for many students it absolutely does. Our highest course utilization occurs at 10 p.m. and on weekends, and the same is true for our live tutoring and tech support. So we know we're reaching students, regardless of previous educational attainment, who need and want a different approach.

STATE: What prompts students seeking degree completion to return to academic studies, and what are their particular needs?

TAKEDA-TINKER: Our students are busy, working adults seeking pathways to either keep or move up in a job, and they need a degree or certification to do that. Our delivery method is the way they can actually fit school into their lives. We were created to serve these non-traditional, modern learners, and our programming is very workplace driven.

STATE: CSU-Global often refers to “return on investment” when describing its programs. Why does that resonate with your students?

TAKEDA-TINKER: As working adults, our students are always making tradeoffs. They are juggling work, family obligations, community obligations, and then school. They are always weighing, “Is this really worth my time and money? How do I know that I'm getting something back that is immediately applicable? Because, otherwise, I could use my resources elsewhere.”

For these students, it gets down to return on investment for their time and money. They want to get their degrees completed, and they are looking into the future to consider the tools and skills they need to be successful in the workplace. What's most important to CSU-Global staff and faculty is that our students are truly moving themselves forward in the workplace.

STATE: What are some key metrics that demonstrate whether it's working?

TAKEDA-TINKER: We look at third-party salary data for our graduating cohorts and have seen that cohorts in every program are moving up in their pay levels. We also survey our alumni employers and have found that learning outcomes correlate well with their expectations. Reviews from these employers also show they are highly or very satisfied with soft-skills acquisitions, especially in the areas of critical thinking and decision-making.

STATE: How is CSU-Global supporting enrollment growth with faculty and degree offerings?

TAKEDA-TINKER: We have 562 faculty members in 48 states, and

they all have recent industry work experience. For our students, it's important that faculty have worked in their areas of expertise so they are not only providing information, but are helping students understand how to practically apply it in the workplace.

We're very intentional about offering programs that facilitate workplace success. We have 26 degree programs and about 50 specializations and certificate programs. As you might expect, our top programs are in high-demand career fields with opportunities for job growth, including business, organizational leadership, technology, and accounting/finance. We provide an enrollment agreement to every student, so they understand the commitment needed to complete a degree. CSU-Global does not charge fees, and we

lock in tuition once students are enrolled and remain enrolled.

STATE: What's ahead for CSU-Global in the next year?

TAKEDA-TINKER: We're excited to have formed a partnership with Aurora Public Schools that will allow us to be a tenant in their community starting in September 2019. The partnership will help the district facilitate scholarship opportunities for their students who find CSU-Global to be the right fit for their educational needs. In my mind, it's huge to put the rent money that we would normally pay to a private landlord toward nonprofit education in Colorado. We look forward to this new collaborative framework and becoming a partner in an even broader educational community in our state. ♦

CSU GLOBAL

Javier, 12

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BALLET *Continued from Page 31*



CSU design students are illustrating costumes, similar to these, for *Giselle*. By Jenn Aiken

dance instruction, choreography, education, business operations, or fundraising. “I hope to open their minds and perspectives to the many ways they can engage in a profession in dance,” Harvey said.

Even so, a highlight of the visit for CSU students was taking class with Colorado Ballet’s professional dancers – the principals, soloists, corps de ballet, and apprentices whose artistry and athleticism bring productions to life. The CSU dancers joined the professionals in the company’s main studio and followed the familiar format of dance class,

beginning with controlled movements at the barre and leading into progressively dynamic leaps and turns en pointe. Gil Boggs, the company’s artistic director, issued rapid-fire instructions in French, the language of ballet, with exercises accompanied by the company’s pianist. The dance students from Fort Collins described the class as challenging, humbling – and inspiring.

The experience moved Jame Fuerte to tears. A Fort Collins native, he dropped out of high school, worked for several years in software development, then returned to education; he earned a high school equivalency diploma, took classes at Front Range Community College, and then transferred to CSU to major in dance. Fuerte, a 22-year-old junior, grew up with hip-hop and break dancing and is a relative newcomer to ballet. It was overwhelming to dance side by side with professionals, to witness their perfection and elegance up close, he said. “This is one of the first times I’ve been in a professional dance setting, and you could see the dedication of these dancers in their technique,” Fuerte said. “It was very powerful for me. It’s like taking this little candle inside me and pouring fuel on it. That’s how inspired I feel.” ♦

HEART DOC *Continued from Page 40*

THE ELITE

“We’re looking for the elite,” Holt said. He soon found them: Young bulls with PAP scores of 37 mmHg, 38 mmHg, 36 mmHg – exceptional test results above 9,000 feet. The ranchers responded gleefully as more than half their bulls scored in the ideal range. “I feel really good about these scores,” Ripp said. “If cattle test well here, they can go anywhere. The fact that I PAP test at this altitude is a big marketing hook for me.”

Drs. George Glover and Isaac Newton, seminal figures in CSU’s veterinary program, first described high-mountain disease in 1915. Nearly seven decades later, Holt, who grew up in Denver, was introduced to the disease while studying agricultural biology as an undergraduate at Fort Lewis College in Durango. He got a job in 1980 helping with research into why bulls were routinely getting sick after transport from lower elevations to an evaluation center near his college campus. It sat at 8,091 feet above sea level. “The first cow I touched was during PAP testing. Then I was addicted,” Holt said. He began to wonder whether the test protocol could be improved and whether data produced could be tracked over time to reduce incidence of disease. “I wanted to give producers an option to select cattle genetically resistant to the effects of altitude,” Holt said. He worked with two ranches in southwestern Colorado to prove his concept. Holt, who earned his veterinary degree at CSU, practiced for nearly two decades in Gunnison, then joined the CSU veterinary faculty and continues to help ranchers apply PAP scores to management decisions.

The Ripp’s ranch above Dallas Divide is the highest point Holt annually conducts PAP tests, and he was pleased with data collected. Yet he

had another objective during the trip – teaching. “Mind if I give it a stab?” Sundberg asked after observing Holt’s smooth technique. Like her mentor, she wore a Denver Broncos cap, a requirement for students on the PAP tour. Unlike her mentor, uncertainty clouded her face as Sundberg held a fresh, 13-gauge needle – with a circumference somewhere between a piece of spaghetti and a pencil – and contemplated the neck it would enter.

Ripp halted the patient and pulled the bull’s head to the side to expose the jugular vein. Herrick sprayed on a sterilizing solution, and Holt held Sundberg’s right hand to demonstrate correct position. “You can’t hesitate,” she said, reminding herself. With a quick jab, she hit her mark. “Beautiful. That was gorgeous,” Holt told his student. Holding the needle’s hub, Sundberg advanced a catheter toward the bull’s pulmonary artery. “You’re almost there,” Holt coached, as he watched wave forms on the monitor. “Now back it out a little. There you go. Sweet! That’s a 40.” Sundberg had learned the science of PAP testing, but working alongside Holt gave her another impression. “It’s an art,” she said.

Fellow veterinary student, Rose Digianantonio, who had assisted on an earlier visit to Tie Siding, Wyo., said tagging along with Holt gave her new respect for ranching. “I like getting out here, meeting these people, and seeing how much people care and the work they do to produce their cattle. It’s been amazing,” Digianantonio said, standing in a muddy corral as a blustery fall snowstorm approached. “Dr. Holt is an amazing person to learn from. It’s so cool to be part of something so innovative.”

After repacking equipment at the Ripp ranch, Holt and his two-woman veterinary crew headed north to Montrose, where another 200 bulls awaited testing. They would work until 9 o’clock that night before moving north again. ♦



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