

[Stair chase builds muscles, health, camaraderie among CU staff](#)[1]

By Cathy Beuten

One, two, three, four . . . make it to the next floor!

From left, Amanda Ulrey, Gabriela Pena and Cary Ihme get into the spirit of the Great Stair Chase at 1800 Grant St.

To test their endurance and prove their mettle, 34 University of Colorado system employees recently embarked on the Great Stair Chase. Competitors sprinted, jogged, walked or even moseyed from the first floor lobby to the eighth floor then back down again. There were 20 stairs per floor.

Five, six, seven, eight . . . whoa my legs don't feel so great!

The Office of the President held the inaugural stair chase May 13 to promote health and build camaraderie. Leonard Dinegar, senior vice president and chief of staff said the event was intended, "No. 1, to have some fun with staff." The stair chase gave employees at 1800 Grant St. an opportunity to do something healthy and enjoyable, he said, and to introduce the system's health promotion program manager, Risa Heywood.

"Everyone has something that they are working on health-wise, whether it's to exercise a little more, eat healthier or learn how to handle stress better," Heywood said. "Since we spend so much of our day at work, it's easier to make healthy choices when you know that your employer and your coworkers are supporting you."

Regent Steve Bosley, one of the founders of the Bolder Boulder, donated numbered bibs from the 10K race for stair chase participants.

At the halfway point – the "you-made-it-to-the-top" point – Dinegar and other volunteers doled out water and fresh, healthy . . . doughnuts?

"I like to ease people into wellness," Dinegar said. "I don't like to rip a Band-Aid off, but make sure they are comfortable. I admit it's not healthy, but it's a step in the right direction." Besides, he quipped, "They have to get up eight flights of stairs before they can get a doughnut."

Even those not undertaking the stair challenge got into the spirit of the event, cheering on participants as they bolted or waddled past (depending on the floor). Individual racers and relay team members rocked out to boom boxes, provided by a race volunteer, blaring everything from the Stones to Billy Joel, and rocked on to the applause, whoops and hollers from colleagues. All participants made it safely to the top and back down.

Winners of the challenge included:

40 and older female: Michelle Malfatti, 2 minutes, 14 seconds 40 and older male: David Temple, 1:34 Under 40 female: Katie Quintero, 1:49 Under 40 male: Rosen Georgiev, 1:42 Team relay: Amanda Ulrey, Nora Sandoval, Tracy Konen and Kari Abarca

In the weeks leading to the event, Heywood had encouraged employees to take the "stair challenge," which encouraged them to log the number of stairs climbed each day. Participants were challenged to do more by virtually "climbing" international landmarks, such as the Statue of Liberty and the Eiffel Tower. Winner of the challenge was Erin Russell, who logged more than 1,000 flights of stairs.

"Events like the stair chase, and others that I have planned for the future, demonstrate loud and clear that the university cares about the health of its faculty and staff," Heywood said.

Post-race surveys note that because of the challenge and the chase, 73 percent of participants are taking the stairs more often. Participants and fans reported the event was a good motivator and that it built camaraderie and morale. Heywood says the stair chase will most certainly continue as an annual event.

"One-hundred percent of participants think we should hold the event again next year," she said.

What did participants like least? Comments included, "Losing to my coworkers," "the burn" and "aching muscles three days later."

The stair chase succeeded in mixing wellness in with festive fun and, importantly, Dinegar noted, "gave folks an opportunity to do something they may enjoy and can keep on doing."

[With cross-country tour, bicyclist brings men's depression into light](#)[3]

[4]  
On a quiet September evening in 2002, with his kids tucked in bed downstairs and his wife at work, Mark Meier grabbed the 12-gauge shotgun and pressed the barrel to his mouth. He wanted the pain and struggle, the feelings of worthlessness, the dark days, to end.

Some 14 years before, while in college, he had been diagnosed with depression. Feelings of shame and embarrassment turned him away from treatment. Like many men, he tried to deal with feelings of anxiety and bouts of despondency on his own, and told no one about his illness. Even after studying mental illness and earning his master's degree in social work in 1994, he refused to acknowledge the warning signs; he was a hockey-playing man's man and the stigma was just too great.

To cope with his symptoms, he made friends with alcohol. That only stopped the pain for a few hours. Later he closed himself off, ignored his wife and shunned his playful, happy children. He preferred to focus his energy on work, climbing the corporate ladder. Misery still followed. He thought if he quit his well-paying but stressful job he would get better. Instead, he felt only self-loathing; his outlook on life spiraled ever downward.

Luckily, he never fired that gun in 2002. A few days later, after another brush with suicide, he landed in a psychiatric hospital, and it was there that he began his journey upward to a new life.

This summer, that journey entails a 3,600-mile bicycle ride from Palo Alto, Calif., to New York, aimed at raising awareness about men and depression and reaching a wider audience – all those men who believe they must suffer in silence. After riding up to 80 miles a day, he'll reach Denver on Thursday, June 16; events are planned through the University of Colorado Depression Center. Following a press conference on June 17, a "Men and Depression Strategy Meeting" that is open to the public will be conducted at the center on the Anschutz Medical Campus from 10 a.m. to noon. Events for June 18 still are being confirmed.

Mark Meier and daughter Anna will team up for the second leg of his cross-country bicycle tour.

About 80 percent of all suicides in any given year are men, even though women make more attempts. At the age of 50, during the so-called mid-life crisis, men are three times more likely to suicide. By age 65, men are seven times more likely to commit suicide than at any other time in their lives.

Experts estimate that, like Meier, as many as 80 percent of people who experience depression don't seek help and keep their problems secret.

Meier's struggles, however, are no longer private. Family and friends now understand why he was never around. The graduate students in his classes at the University of Minnesota where he is an adjunct faculty member have heard the stories. So have hundreds of men to whom Meier has spoken through his Minneapolis-based consulting business, Equalicare, which conducts training and builds programs concerning workplace depression. Meier, now 44, draws on his years as a clinician and personal experiences in his work.

"Over the course of that year-and-a-half that I was out of the hospital, I absolutely dealt with the depression and anxiety," he says. "It's not like it magically went away. It was a lot of reality testing and trying to utilize the skills I learned about managing stress and challenging my negative thoughts."

On the bike tour, crew member and friend Bill Dehkes drives the RV that is wrapped with advertising announcing the newly formed [Face It Foundation](#)[6], an endeavor launched by Meier and Dehkes to encourage men to talk about depression.

"What I want to do with the foundation is bring to life depression management systems for men online, to have an Internet-based forum for men to access," Meier says. "A lot of men are not willing to go to counseling. They're reluctant, sometimes with good reason, to take antidepressants." Medications often have side effects with a sexual component that men are unwilling to accept. But data shows that for mild to moderate depression, psychotherapy is as effective as drugs in many cases.

Meier says the Internet forum "won't necessarily replace counseling, but will get men engaged in learning some coping skills and ways to deal with their depression. And it will be a way to connect men to one another who have been dealing with depression and who have common needs and goals."

For the first leg of his bike ride, which began last month, Meier is riding alone, stopping at hospitals, treatment centers, coffee shops, churches, family picnics – anywhere there are men who could benefit from his experiences.

"The bike ride is an opportunity to partner with organizations that are focusing on depression and see the work that is being done," Meier says. "It was an opportunity to go coast to coast and raise attention and awareness for men and depression. Plus, I love to bike. I've always had this dream of being able to ride coast to coast, so it was a good opportunity when I launched this foundation a little over a year ago to realize a couple of dreams of mine."

As the Denver stop wraps up, on Father's Day, Meier will be joined by his daughter Anna, a high school freshman, and they'll continue the coast-to-coast ride on a tandem bike.

The University of Colorado Depression Center is one of 18 leading depression centers and academic medical centers around the country that belong to the National Network of Depression Centers. Like Meier, the Depression Center is working to reach out to men who are reluctant to ask for help.

"Men are acculturated to push down their emotional life," says Neil Weiner, director of clinical services at the center. "So much of what men do in their lives is just to buck up and deal with it and to put on that outward shell of masculinity and show others they can cope even though they are really, really struggling inside."

Men perceive depression and being unable to deal with it as a weakness. But in reality, says Weiner, it takes strength and courage to get treatment for a disorder that affects their job and family in a negative way.

Formed in 2008, the [Depression Center](#)[7] includes clinical services and a research component. Community programs and education also are important to the center.

"For us, partnerships and working with people – like Mark Meier – and organizations is everything," says Matt Vogl, community programs manager at the center. "We need people to bring their ideas and their enthusiasm and efforts if we're really going to make an impact in the state. We know we can't go it alone."

No one can, especially men who have depression. Along the ride, Meier has heard the stories of a Vietnam veteran who has been at war with depression for years, and a college student who described the huge impact his father's illness had on him. Meier listens and offers advice.

Talking about depression is the easy part for Meier now. The two-wheeled ride – with its snowy mountain passes and brutal headwinds – has challenged him physically and mentally.

"I have found myself missing my family, questioning my ability to keep pushing forward, the value of the ride," Meier

says. "What I have been able to do, which is something I couldn't do for years while depressed, is to slow myself down and recognize that I can do this. Depression has this wickedly uncanny ability to make you doubt every last aspect of who you are. ... This journey has absolutely been worth it. We have touched several lives already and I am learning to trust myself more and more each day."

[Cyber attacks: One click can mean major crash](#)[8]

A recent cyber attack on defense contractor Lockheed Martin has again landed information security breaches in the news. In a possibly related incident, a cyber intrusion at RSA, which provides computer security services used by such companies as Lockheed Martin, was suspected to have begun with simple phishing emails.

No matter how advanced the technical controls of an organization, there's no protection for some human mistakes. Clicking on unknown links in email is an example: The phishing email that may have caused the RSA breach contained a malicious file titled "2011 Recruitment Plan."

The CU Office of Information Security (OIS) and IT professionals always are on alert to fight against emerging threats, but all faculty and staff are the first and last lines of defense. Always pay attention to the sender of email, and beware unexpected subject lines. Never send a password via email and never click on unknown links, especially links in email marked "spam."

OIS also reminds members of the university community to report suspicious emails immediately to their IT support personnel. Remember – one wrong click could mean severe consequences for the whole organization.

[Faculty delve into 'StoryTeaching'](#)[9]

Mike Marlow

Brad McLain

**Brad McLain** and **Mike Marlow** of the University of Colorado Denver's School of Education and Human Development recently delivered a NASA-sponsored Astrobiology Education and Training (AbET) webinar, "StoryTeaching: An Exploration of the Importance of Story and Narrative in Science Learning."

During the seminar, they discussed how humans are natural storytellers. Humans describe experiences and talk about history through stories. Humans construct new understanding through the reframing of old stories and the creation of new ones. We even describe who we are – to ourselves and others – through stories. When applied to science learning and science communication, the concept of "story" represents a powerful framework for making science, technology, engineering and math lessons relevant and exciting.

McLain and Marlow explored "StoryTeaching" as the intersection of two fields of study: (1) Science Identity Construction through Experiential Learning, and (2) the Narrative Study of Lives. They also discussed the formation, maintenance and maturing of positive science identities in the face of an often science-hostile youth culture, and the significance of personal ownership and integration of STEM into an individual's sense of self through the processes of interpretation and meaning making inherent in story.

To view an archive of the presentation, visit <http://astrobiology.nasa.gov/articles/nai-storyteaching-seminar/>[12].

[Harris takes new post at University of Colorado Law School](#)[13]

Susani Harris

**Susani Harris** has been named senior director for diversity and inclusive excellence at the University of Colorado Law School.

This new position, housed in the Office of Career Development, is designed to help further embed the principles of inclusiveness, facilitate pipeline activities, and connect students and alumni with the profession's efforts to increase diversity.

"I have long been committed to diversity and inclusiveness in the law community and with this new position, I hope to take that commitment to the next level," Harris said. "Colorado Law and Dean (David) Getches have entrusted me to assist and support our diverse student population and I am delighted to accept that challenge."

Previously, Harris was the assistant dean for career development, helping to counsel, assist and encourage students and alumni in their efforts to focus on and explore their career options, develop useful networking skills, prepare effective cover letters and resumes, and develop successful interviewing techniques.

Harris was legal counsel for a settlement consulting firm in Houston from 2003 to 2007. Prior to that, Harris was an attorney at Holland and Hart for 20 years, practicing oil and gas and mining law and served as director of attorney recruitment and professional development, and as director of diversity and professional development. While at Holland and Hart, she was responsible for the recruitment, hiring, counseling, development, and retention of attorneys, and for guiding and assisting the firm in carrying out its commitment to recruit, hire, retain and promote a diverse attorney workforce. She also provided diversity consulting to numerous clients, other law firms, and corporations.

Harris was the primary drafter of the original Colorado Pledge to Diversity, which was signed by 23 Denver law firms. She also served twice as co-chair of the steering committee for the original Colorado Pledge to Diversity Law Firm Group.

The new position is part of Colorado Law's continuing efforts to place its students in the job market. Colorado Law recently hired a national career expert, Whiting Dimock Leary, to serve as senior assistant dean for students and coordinate student affairs, including the Career Development Office.

"We continue to broaden the career development office efforts and will look to expand our staff," Leary said. "We are taking steps to enhance our local and national outreach efforts and helping to place our students in a broad range of

careers that truly reflect the enhanced analytical skills with which they graduate."

A search is under way for a new assistant dean for career development.

### [Five questions for Clayton Lewis](#)[15]

Clayton Lewis

Making computers easier to understand has been one of Clayton Lewis' long-running interests.

During the formative years of computers, he says, mathematicians and computer scientists didn't know how to make the technology as easy as possible to understand. That's partly what motivated him. After earning a master's degree from MIT, Lewis was hired by IBM. There he worked with a pioneering psychologist, John Gould, and was encouraged to earn a degree in psychology in order to tackle the problem.

While taking Ph.D. courses, he became a visiting instructor at the University of Texas. He found he was committed to teaching but worried that in a research university setting he wouldn't be able to focus on teaching and expect to be successful. He returned to the IBM Watson Research Center where he worked on problems related to human-computer interaction.

Still caring deeply about teaching, [Lewis](#)[17] decided to once again give academia a try. In 1984, he was recruited to the University of Colorado where he is a professor of computer science and a fellow at the Institute of Cognitive Science. For the past five years, he has had the role of Scientist in Residence at the Coleman Institute for Cognitive Disabilities, which promotes the development of technology for people with cognitive disabilities.

"This has been a great setting for me all the way around," he says. "Thankfully, I was able to work out a career in which I could devote considerable attention to teaching. Happily, I've received a lot of encouragement from the university."

In 1989, he was named to the charter class of the President's Teaching Scholars Program, which he describes as a wonderful community that has developed a variety of initiatives to help faculty with learning and teaching.

— Cynthia Pasquale

#### **1. How did you choose this career?**

My life was influenced by Martin Gardner, who was trained as a journalist, and became a leading amateur mathematician and leading amateur magician. He wrote many books, but the thing that touched me and many other people was his column, Mathematical Games and Recreation, published in Scientific American. He had an amazing ability to learn about some interesting topic in mathematics then write a column about it and always included something you could do actually do.

In the '50s and '60s, before computers were much of a factor, one of his columns showed how you could make a computer that would actually learn how to play a simple game. Through this, I began forming an interest in computers. Another thing was that I was given gift money to buy a Geniac. It was not a computer by today's standards, but with the Masonite, fasteners and wire, you could make a device that would set up complicated logic circuits. The creator included in the box a reprint of a paper by Claude Shannon, known as the creator of information theory. The paper discussed the logic of switches and really explained the basis for everything you could do with Geniac.

Also, someone brought a computer to my high school for a summer course and I took that course. So after high school, my ambition was to work in this field. In college, however, I was too early to study computer science. There were few programs available, so I was a mathematics major as an undergraduate.

**2. Your research includes human-computer interaction. What does your work entail and what do you hope to accomplish?**

My top-level goal over all is to make computer systems possible for people to understand. There are many benefits of that, including productivity. One of my colleagues has written about the fact that a computer's impact on productivity often is negative, so making improvements is one of my goals. I've been particularly interested in making programming more accessible to people so they can make the computer do what they want it to do. Most computer use isn't like that. Someone else has created something that you are going to use and you don't have anything to say about what it's like. So I'm interested in opening up the computer as a tool.

My most impactful contributions enable people to evaluate designs so creators can identify strengths and weakness so the designs can be improved. There's no substitute for coming up with ideas, evaluating them and testing the designs with real people. People are so complicated that you can't anticipate how it will strike them.

I've contributed to a couple of methods of evaluation that are in everyday use, especially in software development. One moved over from the experimental psychology lab – the "thinking aloud" method. You give someone something to do, in this case with a computer program in prototype form, and ask them to do an action and tell you what they are thinking. This exposes a lot of problems that are difficult to discern otherwise. For example, labels aren't always interpreted the way the designer thought they would be. It's very hard to tell that from just watching someone use something, but if they narrate what they are doing, these clashes become very evident.

A colleague, Peter Polson, and I and students also developed the Cognitive Walkthrough method. This technique looks at a design step-by-step to determine whether an interface adequately cues the actions people are going to take.

Of late, I've put less work into this line of things. Compared to where we were when I started this line of work way back when, most of the problems have very substantially been solved. Now I'm interested in making programming more accessible. The field tolerates programming languages that are barely good enough. Beginners are subjected to all kinds of frustrations because the field just can't be bothered to deal with it. I harbor the hope that we can do a better job and hope to come up with programming approaches that would make things radically easier.

I'm also involved in an international project where institutes around the world have partnered to reshape what you have to do to create Web applications. We have a long way to go, but the foundational work is being done in how software is structured to open the way for easier ways to create applications.

**3. Computer innovations are increasing so rapidly, they seem to be leaving the normal user behind. Do you think that's true?**

It's hard for us to accurately judge the trend. What you have to realize is that we're aware of the things we don't know how to do, but what's easy to lose sight of is how much more we're able to do now without being aware of it. If we focus on what we're able to do, there's been a huge increase in the number of things we can do. You don't have to go back very far to a time when there wasn't a service like Amazon to order books online. For instance, it used to be that if you needed to change a shipping address, you had to put the information in in a specific way, in a form the computer would accept. Now you can add information in a way that makes sense to you and the system will accept that. People writing these programs understand it's much better to have the computer expend extra work rather than make users do it.

**4. You worked for the Watson Research Center at IBM. Did you have any connection to Watson, the famous Jeopardy computer champ?**

During my first job with IBM out of grad school, one of the things going on there was early work on getting computers to understand the natural language process. I made a vow that I was not going to work on natural language processes again because I was convinced that the problems were too difficult to be addressed. I wasn't wrong in that, but I was wrong in not taking a broader view. It's still true up to now that the techniques we were trying to use back then have not worked to this day. What I didn't anticipate is there are completely different approaches that do work, as exemplified by Watson.

The Watson system scavenges its knowledge to answer questions. It scavenged all that from the Web. I joke with one of my colleagues about my vow, and he finds it very amusing.

### **5. What do you consider to be one of your proudest achievements?**

One of my greatest sources of satisfaction is that I've done some work that people all over the world find useful. At a conference, one of the people sitting at the table said, "Boy, there's a great technique that I think we should be using for this problem. It's called the Cognitive Walkthrough. There's this paper by this guy, Clayton Lewis ..."

Of course, he had no idea who I was, but other people did know and they were chuckling about it. What could be better than to have somebody with no idea that you're in the audience saying positive things about how useful something is that you did. I'm very fortunate that I have been able to do some things that people find useful, so that's enormously satisfying.

I hope the work I'm doing now with the Global Public Inclusive Infrastructure, which hopes to reshape the Internet to make it more useful for people with disabilities, will have the same effect.

Teaching is important to me. I recently got a note from a former student who was struggling and left CU. He wrote that he had finished his bachelor's and that he appreciated what I had told him. He felt that what I said was useful in allowing him to go on and be successful. I'm grateful to be able to work with so many students and make contributions to their lives.

Want to suggest a faculty or staff member for Five Questions? Please e-mail [Jay.Dedrick@cu.edu](mailto:Jay.Dedrick@cu.edu)[18]

### [Elite Triathlon Academy to launch at UCCS](#)[19]

Representatives of USA Triathlon, the United States Olympic Committee and the University of Colorado Colorado Springs announce the establishment of the Elite Triathlon Academy during a Tuesday, June 7, news conference at the university. [Photo: Jeff Foster

A new landmark program at the University of Colorado Colorado Springs will provide elite young athletes the opportunity to earn a top-notch college education while benefiting from a full-time coach and the country's best training resources.

The Elite Triathlon Academy at UCCS will launch this fall with national-level support from USA Triathlon and the United States Olympic Committee, both based in Colorado Springs.

The ultimate goal of the program – directed by Keith Dickson, founder of the Illinois-based Multisport Madness Triathlon Team – is to develop potential Olympic triathletes into medal contenders on the sport's biggest stage. Five of the nation's best emerging multisport athletes, including 2010 Youth Olympic Games medalists Kevin McDowell and Kelly Whitley, compose the first class of the Elite Triathlon Academy, which will enroll at UCCS in August.

In the past, top junior triathletes in the U.S. often chose to pursue running and swimming at the collegiate level because of the availability of scholarships. The Elite Triathlon Academy will identify potential Olympians and allow them to continue their multisport development throughout their college years with the potential to earn a collegiate scholarship.

Academy student-athletes will attend UCCS, one of the fastest-growing universities in Colorado and the nation, and will have full access to the resources of the nearby U.S. Olympic Training Center, a full-time coach and UCCS athletic facilities.

"This program will strengthen the United States as a competitor in international triathlon by giving young, elite triathletes the opportunity to train specifically for triathlon during their college years," Dickson said. "The combination of UCCS, which already has 29 Olympic athletes on campus, the U.S. Olympic Training Center, our nation's finest young



triathletes and proven coaches and mentors will make this a successful venture from the start.

From left, student athlete Kevin McDowell, Elite Triathlon Academy Director Keith Dickson and UCCS Chancellor Pam Shockley-Zalabak. [Photo: Casey B. Gibson/USA Triathlon]

"Thanks to the formation of the Elite Triathlon Academy, every youth and junior triathlete in the country can now strive to earn a university scholarship in the sport of triathlon."

USA Triathlon CEO Rob Urbach said the academy will help solidify the sport's Olympic pipeline.

"This program will encourage the top junior athletes to stay in the sport during their formative collegiate years, and they'll receive a quality education while striving for the Olympic podium," Urbach said. "The sport of triathlon in the United States has benefited tremendously from its inclusion in the Olympic Games, and sustained success by American athletes internationally will help take our sport to new heights on many different levels."

Joining McDowell and Whitley, both of Geneva, Ill., in the program will be fellow freshman Johanna Gartman (Chattanooga, Tenn.), as well as sophomore transfer Ryan Bice (University of Colorado Boulder; Logansport, Ind.) and junior transfer Chris Wiatr (Lake Forest College; Long Grove, Ill.).

"Colorado Springs is an athletic mecca," said UCCS Chancellor Pam Shockley-Zalabak. "The university's partnership with USA Triathlon will bring top athletes to our region and provide them with the opportunity to excel athletically as well as academically."

The Elite Triathlon Academy is an example of the Olympic Movement and a leader in higher education joining forces to develop a groundbreaking program that will benefit the entire Colorado Springs community.

"As we look to allocate resources, we're constantly working with NGBs to develop customized and creative athlete support programs that make an impact," said USOC CEO Scott Blackmun. "The Elite Triathlon Academy, which provides athletes with high performance training and an education, is exactly the kind of innovative and targeted program that we're looking to support. I'd like to congratulate USA Triathlon and UCCS for making this program a reality and I look forward to welcoming these triathletes to Colorado Springs in the fall."

Elite Triathlon Academy student-athletes will be housed in an apartment complex just north of the UCCS campus. They will receive the same priority scheduling privileges as varsity student-athletes so that academy athletes may schedule their desired courses around team practice times. Elite Triathlon Academy student-athletes also will receive the same level of academic support available to all UCCS student-athletes.

The academy will employ a full-time coach to facilitate daily training sessions, as well as a part-time coach to help with management of training sessions and administrative duties. The program is expected to grow by five athletes annually with a proposed capacity of 20 athletes.

USA Triathlon High Performance Senior Manager Andy Schmitz and USOC Sport Performance Director Scott Schnitzspahn will serve in advisory roles for the academy. UCCS Vice Chancellor for Administration and Finance Brian Burnett, who negotiated the agreement, will serve as the academy's key contact with the university and will manage its business relationship with the program.

[CU study: Ancient hominid males stayed home while females roamed](#)[22]

Australopithecus africanus (Courtesy of Transvaal Museum)

Paranthropus robustus (Courtesy of Transvaal Museum)

The males of two bipedal hominid species that roamed the South African savannah more than a million years ago were stay-at-home kind of guys when compared to the gadabout gals, says a new high-tech study led by the University of Colorado Boulder.

The team, which studied teeth from a group of extinct *Australopithecus africanus* and *Paranthropus robustus* individuals from two adjacent cave systems in South Africa, found more than half of the female teeth were from outside the local area, said CU-Boulder adjunct professor and lead study author Sandi Copeland. In contrast, only about 10 percent of the male hominid teeth were from elsewhere, suggesting they likely grew up and died in the same area.

"One of our goals was to try to find something out about early hominid landscape use," said Copeland, who also is affiliated with the Max Plank Institute for Evolutionary Anthropology in Leipzig, Germany. "Here we have the first direct glimpse of the geographic movements of early hominids, and it appears the females preferentially moved away from their residential groups."

A paper on the subject appears in the June 2 issue of *Nature*. Co-authors included CU-Boulder anthropology Professor Matt Sponheimer, Darryl de Ruiter from Texas A&M University, Julia Lee Thorp from the University of Oxford, Daryl Codron from the University of Zurich, Petrus le Roux from the University of Cape Town, Vaughan Grimes of Memorial University-St. John's campus in Newfoundland and Michael Richards of the University of British Columbia in Vancouver.

The new study results were somewhat surprising, Copeland said.

"We assumed more of the hominids would be from nonlocal areas, since it is generally thought the evolution of bipedalism was due in part to allow individuals to range longer distances," she said. "Such small home ranges could imply that bipedalism evolved for other reasons."

The team used a high-tech analysis known as laser ablation, zapping the hominid teeth with lasers to help them measure isotope ratios of strontium found in tooth enamel in order to identify specific areas of landscape use. A naturally occurring element, strontium is found in rocks and soils and is absorbed by plants and animals.

Since unique strontium signals are tied to specific geological substrates – like granite, basalt, quartzite, sandstone and others – they can be used to reveal landscape conditions where ancient hominids grew up, Copeland said.

"The strontium isotope ratios are a direct reflection of the foods these hominids ate, which in turn are a reflection of the local geology," she said.

The study was funded by the National Science Foundation, the Max Planck Society, a University of Colorado LEAP Associate Professor Growth Grant and the University of Colorado Dean's Fund for Excellence.

"It is difficult enough to work out relations between the sexes today, so the challenges in investigating the ways that male and female hominids used the landscape and formed social groups over a million years ago are considerable, to say the least," said CU-Boulder's Sponheimer. "Disembodied skulls and teeth are notoriously poor communicators, so the real difficulty with a study like this is finding new ways to make these old bones speak."

Strontium isotope signatures are locked into the molars of mammals by the end of tooth enamel formation – for the hominids, probably at about 8 or 9 years old when they were traveling with their mothers. The Sterkfontein and

Swartkans cave systems that yielded the teeth are less than a mile apart and dominated by a sedimentary carbonate rock known as dolomite, which has a distinct strontium signal, she said.

The team tested 19 teeth dating from roughly 2.7 million to 1.7 million years ago from both *Australopithecus africanus* and *Paranthropus robustus* individuals from the two caves, which are well known for yielding valuable scientific data on hominid evolution.

Because the male hominids, like male humans, were larger than the females, the team used the size of individual molars to determine which were most likely from males or females, Copeland said. They also compared them to teeth and jaw fossils recovered from five early hominid sites in South Africa.

Both *Paranthropus robustus* and *Australopithecus africanus* were part of a line of close human relatives known as australopithecines that included the Ethiopian fossil, Lucy, estimated to be some 3.2 million years old and regarded by many as the matriarch of modern humans. While *Australopithecus africanus* might be a direct ancestor of modern humans, *Paranthropus robustus* and its close relative, *Paranthropus boisei*, both dead-ended on a side branch of the hominid family tree for reasons still unknown.

The female dispersal pattern believed seen in the two hominid groups is similar to that of many modern humans, chimpanzees and bonobos, said Copeland. But it is a dispersal pattern unlike most other primates – including gorillas – where the females stay with the group they are born into and the males move elsewhere. "This study gets us closer to understanding the social structure of ancient hominids, since we now have a better idea about the dispersal patterns," she said.

The team also used laser ablation to zap 38 fossilized teeth of baboons, antelope and small, rodent-like creatures known as hyraxes that lived in the same area at about the same time as the two australopithecine species under study. The results showed nearly all of the mammal teeth were local, implying such groups had relatively small home ranges, much like the australopithecine males, said Copeland.

While Sponheimer said the study could be taken as support for the position that bipedalism arose for reasons other than improved locomotion, the data might also indicate that many hominids simply preferred to live on dolomite substrates where caves would have been abundant. "I've never thought of these early male hominids as the quintessential cavemen, but the potential use of caves at this early time period is something worth considering."

In addition, the team analyzed more than 170 modern plants and animals within a 30-mile radius of the two cave systems, sampling 11 different geological substrates. The minimum distance from the cave systems to nonlocal geology areas is about 2 miles to the southeast, 4 miles to the northwest and more than 20 miles each in northeast and southwest directions, Copeland said. It is still not clear where the roaming female australopithecines identified in the study spent their formative years, she said.

[Experiential Learning Center immerses students in hands-on learning](#)[25]

[26]

The University of Colorado Denver's [Experiential Learning Center \(ELC\)](#)[27]) works closely with students, faculty, employers and community partners to provide quality experiential learning opportunities for students that enhance academic learning, integrate theory and practice, and promote professional development and active citizenship. Experiential learning includes a variety of activities with one common goal: to immerse students in hands-on learning outside the classroom where experience is at the heart of the learning process.

With that goal in mind, on April 29, the Experiential Learning Celebration and Showcase was co-sponsored by the Experiential Learning Center and CU Denver Office of Student Life.

At the event, 23 employers showcased their internship programs while more than 80 students from a number of

different majors exhibited their successes from internships and volunteer experiences. Academic departments also showcased experiential opportunities for students.

ELC Internship Advisor and event coordinator Lesley Bishop noted the Experiential Learning Celebration and Showcase gave students an opportunity to share the myriad benefits derived from their experiential learning successes.

"It was a great opportunity for students, faculty, employers and community partners to celebrate and conclude their endeavors in experiential learning," Bishop said.

Besides exhibits, motivational keynote presentations included the 2009-2010 Outstanding Intern of the Year, Virginia Till, and respected faculty Peter Miller, a marketing professor.

Said ELC Director Tony Smith, "This inaugural event was a huge success and we look forward to fostering its growth in the coming years."

#### [Denver Undy 5000: Race takes underwear outside for good cause](#)[28]

The Colon Cancer Alliance will host the Denver Undy 5000, a "brief" 5K walk/run in underwear to raise awareness and money for the fight against colorectal cancer. Proceeds from the event, set for 8:30 a.m. Saturday, June 25, at Denver's City Park will benefit the [Colorado Colorectal Screening Program](#)[29] at the [University of Colorado Cancer Center](#)[30].

Last year's race raised about \$118,000 and included more than 1,000 participants.

This year's race will honor former Denver Councilwoman Carla Madison, who spoke at last year's Undy 5000, but sadly passed away in April after a two-year battle with colon cancer. Her husband, Paul Weiss, will speak this year in her honor. Denver Mayor Guillermo (Bill) Vidal also will speak.

Runners and walkers wear anything from running shorts to their wildest pair of boxers. Participants will receive a commemorative pair of Undy 5000 boxers, while supplies last.

Colorectal cancer is the second leading cause of cancer-related deaths in the United States, but it is preventable through early screening. This fun but important event is held in cities across the country throughout the year to educate the public about colon cancer and early screenings.

Facts about colorectal cancer:

This year, 142,000 people in the U.S. will be diagnosed with colorectal cancer One out of 19 people will develop colorectal cancer in their lifetime More than 75 percent of people with colon cancer have no family history People who are diagnosed in the earliest stages of the disease have a 90 percent chance of being cured, yet only a small percentage are seen early due to a lack of screening or awareness Colon cancer strikes men and women equally and people of all ages and races The most common symptom of colorectal cancer is no symptom at all  
The Colon Cancer Alliance National Conference on Family Matters: What Every Family Needs to Know About Colon Cancer will make its debut in Denver June 23-25.

For more information and to register for the race, please visit [www.undy5000.org](http://www.undy5000.org)[31]

#### [Teachers learn video game design at institute promoting STEM education](#)[32]

Returning participant Sean Boyer helps new teacher Janie Perry learn computational thinking through the AgentSheets software and Scalable Game Design curriculum at the Scalable Game Design Summer Institute at CU-Boulder.

More than 60 middle- and high-school teachers from around the country are learning to design video games at the University of Colorado Boulder as part of the third annual Scalable Game Design Summer Institute, May 31 to June 10.

The institute is part of CU-Boulder's iDREAMS project, which is funded by the National Science Foundation to teach computational thinking skills through video game design.

The project team includes researchers from CU-Boulder's computer science department, School of Education, software partner AgentSheets Inc., and the Science Discovery and Upward Bound outreach programs. More than 15 community college students also are participating in the institute to assist the teachers.

The iDREAMS project, now in its third and final year, was projected to reach 1,200 students through their teachers, but is now on track to involve more than 5,000 students.

Teachers have come to the institute from diverse school districts in Colorado, Wyoming, Texas, Georgia, Mississippi, Ohio, South Dakota and Alaska with a common interest in inspiring middle school students to pursue college degrees and careers in science, technology, engineering and math (STEM) subjects, using a motivating curriculum that begins with video game design and progresses to the programming of scientific simulations.

Before the teachers can inspire their students, they must first master the art of video game design, in an environment that will give them the tools and support they need to take the curriculum into their classrooms.

The institute uses the Scalable Game Design curriculum developed at CU-Boulder and the award-winning AgentSheets game- and simulation-authoring software as the tools for building basic competencies in computation and problem-solving, which students may apply in a range of technological and STEM careers.

These tools are allowing teachers to use creative, constructive programming activities to engage students and improve student learning. For example, after students at Fort Lupton Middle School made their own Frogger-like video game, they used AgentSheets software to create simulations of virus outbreaks and forest fires to learn data analysis and statistics.

Research results have been impressive, showing overwhelming positive response and a desire on the part of the students to take more STEM classes, according to project director Alexander Repenning of the Computer Science department, and co-directors David Webb of the School of Education and Andri Ioannidou of AgentSheets Inc. Results so far have shown that about 70 percent of middle school students participating in Scalable Game Design classes wish to continue with more classes.

About 45 percent of the students participating in the iDREAMS project are girls, and 56 percent are underrepresented minorities. School districts involved range from affluent, technology-rich districts to urban, rural and Native American reservation schools. The project is able to reach students at an age when girls and underrepresented minorities often turn away from challenging subjects.

"While The Washington Post laments that the United States education system is merely producing a nation of electronic consumers, these teachers and school districts are taking a bold step forward to bring computer science education back to middle schools to create a new generation of technological innovators," Repenning said. "This video game design curriculum is designed to teach computational thinking...the modeling, problem-solving and programming skills necessary for success in STEM subject areas."

For more information, visit <http://scalablegamedesign.cs.colorado.edu>[34] and <http://www.agentsheets.com>[35].

[New degree program launched with German university](#)[36]

Students studying finance or international business at the University of Colorado Colorado Springs will have the opportunity to study euros in addition to dollars as part of a new dual-bachelor's degree program with the Frankfurt School of Finance and Management in Germany.

Beginning this fall, UCCS students may earn degrees from both UCCS and the Frankfurt School of Finance and Management, according to Tom Zwirlein, professor in the College of Business. The dual degrees will provide students with credentials that will allow them to work in the fast-growing field of international business and banking.

"If you're looking for a way to distinguish yourself on two continents, this is it," Zwirlein said.

For more than 15 years, German students have traveled to UCCS to study finance at the nationally ranked College of Business and earn certificates in American Business Studies.

But UCCS students have not participated in programs at the Frankfurt School. That's about to change.

"The dual-degree program with Frankfurt School of Finance is an excellent addition to our current international partnerships," said Venkat Reddy, dean of the College of Business. "It's another way the college is helping our students build global futures."

Under a new exchange agreement, German students will study at UCCS for two semesters during their degree program. In exchange, UCCS students will study for two semesters in Frankfurt. At the completion of their respective programs, students earn degrees from both colleges. The integrated program includes study in German language, internships and a written thesis. Students also will complete a core set of courses required of both business schools.

Zwirlein anticipates the program will have five students this fall from each school and will continue to grow as students seek careers in large U.S. or German banks or other industries. Large banks in both countries often have overseas operations, Zwirlein explained, and many corporations are in both countries.

"BMW convertibles and SUVs are made in Tennessee," Zwirlein said. "Someone who understands the culture and business practices in both countries is going to have a tremendous advantage in our competitive global job market."

For more information about the dual-degree program, contact Zwirlein at 719-255-3241 or [tzwirlei@uccs.edu](mailto:tzwirlei@uccs.edu)[37].

[Heritage Society luncheon honors estate donors to CU](#)[38]

By Jeremy Simon

Sallie Duvall enjoys a chat during the CU Foundation's annual luncheon for the Heritage Society, held last month at the Denver Country Club.

More than 90 people gathered at the Denver Country Club on May 26 for the University of Colorado Foundation's annual luncheon for the Heritage Society, which honors those who have made estate commitments to CU to be realized through their wills.

Attendees included numerous former faculty and staff, as well as alumni and friends of each of CU's four campuses. Lunch guests connected over chicken with capers, saw a video introducing the Creating Futures campaign, and heard remarks from CU Foundation President and CEO Wayne Hutchens and CU President Bruce Benson.

The strong Heritage Society event turnout reflected heightened donor recognition of planned giving, and increased enthusiasm as CU pursues the most ambitious fundraising campaign in its history.

Concurrent with the Creating Futures campaign, the CU Foundation has initiated CU in the Future – an initiative to document \$240 million in planned giving commitments. Planned giving vehicles include trusts, bequests, gift annuities and IRA beneficiary designations, enabling many donors to make a greater impact than they thought possible because of tax advantages or the gift's deferred status.

Presently, the foundation has recorded \$140 million in anticipated estate gift provisions, up from \$50 million since 2003. Heritage Society members have expressed their intentions to leave an estate gift to CU. Doing so helps CU anticipate future revenue streams, and enables the university to honor donors for their commitment during their lifetimes.

"The foundation and the university each recognize the importance of a strong pipeline of planned gifts," says Kristen Dugdale, vice president of planned giving for the CU Foundation. "CU is an institution that will be around for hundreds of years to come. These gifts are an important catalyst for CU's continued excellence."

In remarks that touched upon recent CU highlights, Benson – who with his wife Marcy is chairing the Creating Futures campaign – thanked the attendees for their lifetime of commitment to CU.

"People look up to the people sitting in this room," Benson said. "If they see you making a contribution, they're going to do the same thing."

For more information about planned giving to CU, contact 303-541-1335 or visit [cufund.giftlegacy.com](http://cufund.giftlegacy.com)[40]

#### [Colorado Supreme Court hears CU appeal in concealed carry case](#)[41]

A University of Colorado attorney today argued before the state Supreme Court that the university's Board of Regents should retain the authority to govern CU campuses, including setting campus policies on weapons, despite a state law that allows authorized citizens to carry concealed firearms. An attorney representing Students for Concealed Carry countered that the state law allowing concealed carry statewide clearly applied to CU campuses.

The Colorado Supreme Court heard oral arguments in the case of Students for Concealed Carry vs. University of Colorado Board of Regents. The university won a ruling in 2009 when the case was first brought in El Paso County Court. That decision was overturned by the Colorado Court of Appeals in April 2010. The CU Board of Regents voted 5-4 last year to appeal to the Colorado Supreme Court. Each side presented briefs on the case to the court, which today heard 30 minutes of oral arguments from each side. The court will deliberate and render its decision, likely later in the summer or early fall.

CU's policy, in place since 1970, prohibits weapons, including guns, on the university's four campuses.

CU attorney Patrick O'Rourke said the Board of Regents is a separate state constitutional authority, and thus state law needs to clearly articulate that the concealed carry law applies to the university. Because it is not articulated in the law (passed in 2003), O'Rourke said, the regents' constitutional authority prevails. Following oral arguments, O'Rourke said the focus of the case is not whether concealed weapons on campus are a good or bad thing, but rather who gets to decide the question.

"The regents are charged by the Colorado Constitution and the people of the state to make decisions about the governance of the university, and we believe they are best positioned to do so," O'Rourke said. "If the General Assembly wanted to divest the regents of the ability to govern the campuses, it must explicitly say so."

But James Manley, arguing on behalf of Students for Concealed Carry, said the law is clear.

"The Concealed Carry Act plainly applies to all areas of the state," Manley told the court.

He also said people with concealed carry permits are abiding by the law, and that does not change depending on location.

"They have been judged to be safe in all areas of the state. They don't become unsafe when they step onto a college campus," he said.

The 2003 concealed carry law was intended in part to clarify the various and sometimes competing interpretations of concealed carry laws across the state. The Students for Concealed Carry group has said that allowing weapons on college campuses might prevent incidents like the mass shootings at Virginia Tech and Northern Illinois University. Campus law enforcement groups, including the police chiefs on all CU campuses, oppose concealed carry on campuses.

#### [Three CU scientists named 2011 Boettcher Investigators](#)[42]

Three University of Colorado researchers have been named to the 2011 class of Boettcher Investigators in the Webb-Waring Biomedical Research Program. This is the second year for the program, which supports early career scientists in their work toward making discoveries that improve human health.

CU's 2011 Boettcher Investigators are:

[43]

**Zhe Chen, Ph.D.**, assistant professor of immunology at the University of Colorado Anschutz Medical Campus, whose research focuses on antibody production and genomic instability in B lymphocytes



[\[44\]](#)

**Robert C. Doebele, M.D., Ph.D.**, assistant professor of medical oncology at the University of Colorado Anschutz Medical Campus, whose research focuses on resistance mechanisms in oncogene-driven lung cancer

[\[45\]](#)

**Jing H. Wang, M.D., Ph.D.**, assistant professor of immunology at the University of Colorado Anschutz Medical Campus, whose research focuses on antibody production and genomic instability in B lymphocytes

Two researchers from Colorado State University complete this year's class: John D. (Nick) Fisk, Ph.D., and Tingting Yao, Ph.D.

"Our board is very pleased to embark on the second year of this important program, assisting early career investigators in Colorado to continue their important research," said Edward D. "Ted" White III, chairman of the Boettcher Foundation Board of Trustees, who made the announcement.

Individual grant amounts for the research projects range from \$200,000 to \$300,000. CU's allocation of \$700,000 is the largest in the state; it will be divided among the three Boettcher Investigators. Grant amounts varied based on funding allocated to each institution. Per program guidelines, the minimum budget was set at \$200,000.

Boettcher Foundation announced the creation of the Boettcher Investigators program in 2008, the result of an innovative agreement among the Boettcher Foundation, the Webb-Waring Foundation for Biomedical Research and CU. Through the program, Boettcher Foundation now invests more than \$1 million each year into efforts to increase Colorado's competitiveness in biomedical science.

"We've made every effort to ensure that the legacies of the Webb and Waring families live on in the discovery of new knowledge to improve human health and in the advancement of young scientists," said Timothy W. Schultz, president and executive director of the Boettcher Foundation.

Early Career Investigators (ECIs) are faculty members who are four years or less from their first academic appointment at a research institution. Grants awarded by the Webb-Waring Biomedical Research Program support the work of promising ECIs in Colorado. Eligible investigators apply through a competitive process within their respective institution.

"Through this program, the Boettcher Foundation has been able to bring resources to an area where funds are currently lacking and where federal and private research programs provide limited support," Schultz said. "Early career investigators quite frequently have a difficult time securing a first opportunity at an independent research effort that will move them out of the laboratory of their mentors and onto their own new and exciting areas of discovery."

Chen studies abnormalities in the formation and maintenance of neural connections, which are at the foundation of such diseases as Alzheimer's, Parkinson's, mental retardation and many others. Neuronal extensions, or axons, must navigate properly to reach correct targets during early human development and following injuries that damage neural connections.

"Future studies funded by the Boettcher Foundation Webb-Waring award will help advance our current understanding of how these axon guidance molecules normally function and how they contribute to the etiology of certain human disorders," Chen said.

Doebele's research in lung cancer aims to identify specific mechanisms of resistance to a new oral drug, crizotinib, which can inhibit tumor cells with certain abnormal genes.

"The ultimate goal is to extend survival in patients with lung cancer using personalized approaches to select novel drugs based on data from the individual cancer patient," Doebele said.

Wang's work addresses breakdowns in the immune system.

"We are interested in elucidating the molecular mechanisms that regulate an enzyme called activation-induced deaminase, or AID, targeting specificity and efficiency," Wang said. "We are also investigating how AID contributes to genomic instability and cancer development." Better understanding of such mechanisms will increase knowledge of

DNA alterations.

Both Doebele and Wang are members of the University of Colorado Cancer Center, the state's only federally designated comprehensive cancer center. The CU Cancer Center, established in 1988, is funded by a five-year grant from the National Cancer Institute.

The investigators were selected by a systemwide review panel chaired by Ron Sokol, M.D.

"Research is an important focus for a great university," said CU President Bruce Benson. "These winners of Boettcher Foundation Webb-Waring grants are stellar examples of the breadth and depth of the biomedical research being conducted across our campuses."

Chen, Doebele and Wang join CU's 2010 Boettcher Investigators: Robin Dowell, D.Sc., Gidon Felson, Ph.D., and Paul Jedklicka, M.D., Ph.D.

"The Boettcher Foundation wanted the Webb-Waring Biomedical Research Program to invest where the impact would be the most substantial: to fund excellence in people, to partner with the state's research institutions on the implementation of the program and to further the Webb and Waring families' long tradition of commitment to science and human health," Schultz said. "The program enhances the mission of the Boettcher Foundation, which was created by a visionary and pioneering family to effectively assist, encourage and promote quality of life for the citizens of Colorado. It is with gratitude to these generous families that the Boettcher Foundation continues the Webb-Waring Biomedical Research Program that supports the important work of Boettcher Investigators."

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## Links

[1] <https://connections.cu.edu/stories/stair-chase-builds-muscles-health-camaraderie-among-cu-staff>[2] <https://connections.cu.edu/news/stair-chase-builds-muscles-health-camaraderie-among-cu-staff/stairchase>[3] <https://connections.cu.edu/stories/cross-country-tour-bicyclist-brings-mens-depression-light>[4] <https://connections.cu.edu/news/with-cross-country-tour-bicyclist-brings-mens-depression-into-light/meier1>[5] <https://connections.cu.edu/news/with-cross-country-tour-bicyclist-brings-mens-depression-into-light/meier>[6] <http://www.faceitfoundation.org/>[7] <http://www.ucdenver.edu/academics/colleges/medicalschoo/departments/psychiatry/PatientCare/depressionctr/Pages/Welcome.aspx>[8] <https://connections.cu.edu/stories/cyber-attacks-one-click-can-mean-major-crash>[9] <https://connections.cu.edu/people/faculty-delve-storyteaching>[10] <https://connections.cu.edu/file/peoplemarlowjpg>[11] <https://connections.cu.edu/file/peoplemclainjpg>[12] <http://astrobiology.nasa.gov/articles/nai-storyteaching-seminar/>[13] <https://connections.cu.edu/people/harris-takes-new-post-university-colorado-law-school>[14] <https://connections.cu.edu/file/peopleharrisjpg>[15] <https://connections.cu.edu/stories/five-questions-clayton-lewis>[16] <https://connections.cu.edu/news/five-questions-for-clayton-lewis/5q-page-2>[17] <http://spot.colorado.edu/%7Eclayton/vita.html>[18] <mailto:Jay.Dedrick@cu.edu>[19] <https://connections.cu.edu/stories/elite-triathlon-academy-launch-uccs>[20] <https://connections.cu.edu/news/elite-triathlon-academy-to-launch-at-uccs/triathlon1>[21] <https://connections.cu.edu/news/elite-triathlon-academy-to-launch-at-uccs/triathlon2>[22] <https://connections.cu.edu/stories/cu-study-ancient-hominid-males-stayed-home-while-females-roamed>[23] [https://connections.cu.edu/news/cu-study-ancient-hominid-males-stayed-home-while-females-roamed/h\\_ap](https://connections.cu.edu/news/cu-study-ancient-hominid-males-stayed-home-while-females-roamed/h_ap)[24] [https://connections.cu.edu/news/cu-study-ancient-hominid-males-stayed-home-while-females-roamed/h\\_pr-2](https://connections.cu.edu/news/cu-study-ancient-hominid-males-stayed-home-while-females-roamed/h_pr-2)[25] <https://connections.cu.edu/stories/experiential-learning-center-immerses-students-hands-learning> [26] <https://connections.cu.edu/file/ucd-elcjpg>[27] <http://www.ucdenver.edu/life/services/ExperientialLearning/Pages/default.aspx>[28] <https://connections.cu.edu/stories/denver-undy-5000-race-takes-underwear-outside-good-cause>[29] <http://www.ucdenver.edu/academics/colleges/medicalschoo/centers/cancercenter/CommunityAndEducation/colorectal/Pages/CCSP.aspx>[30] <http://www.uccc.info/for-healthcare-professional/cancer-center/index.aspx>[31] <http://www.undy5000.org/>[32] <https://connections.cu.edu/stories/teachers-learn-video-game-design-institute-promoting-stem-education>[33] <https://connections.cu.edu/file/ucb-gammingjpg>[34] <http://scalablegamedesign.cs.colorado.edu/>[35]

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