Task Force on Efficiency reflects on progress at five-year mark[1]

As the President's Task Force on Efficiency approaches its fifth birthday in November, university leadership is reaching out to faculty and staff across the system for input on achieving further improvements in how business is done within System Administration at the University of Colorado.

Faculty Council heard a presentation on the task force's plan for this year's outreach, which began with the council's Feb. 28 meeting at 1800 Grant St. Leonard Dinegar, senior vice president and chief of staff, and Dan Montez, director of the Office of Policy and Efficiency, presented the latest scorecard for Administrative Policy Statements, which have been trimmed from 210 in November 2008 to 85 as of this January.

"We were pretty aggressive in paring these down, but my sense is that we've hit the sweet spot," Dinegar said. "I don't think we're going to see much more reduction of policies."

The number of pages associated with those policies also has tumbled since 2008, when President Bruce D. Benson established the task force: from 650 then to 265 now.

Dinegar and Montez plan to speak with between 15 and 20 groups on the campuses, including many faculty and staff governance groups, in order to gather feedback on the task force's mission and system administration in general. A survey that launched Monday – in an email to anyone who has signed up for the task force's policy updates, as well as several faculty and staff governance groups on the campuses – also will enable feedback.

Faculty Council member Jerry Peterson said the streamlining of policies suggests a heightened level of trust: "This decrease in the total volume of policy statements implies that the system is trusting the faculty and staff more. Is that a fair interpretation?"

Dinegar said it is.

"One thing we learned through the work of the task force is to really pay attention to, what's the policy's impact to the end user?" Dinegar said. "What's it going to do to the person on the front lines?"

Benson appointed the Task Force on Efficiency in 2008 to improve system administration and its interaction with the campuses. The task force's charge included identifying ways to improve the general efficiency and effectiveness of system administration operations.

"Many individuals on the campuses deal with system administration in a very limited way," Dinegar said. "The campuses are paying $38 million a year to run the system administration, so you ought to know what it's all about. The campuses ought to know what they're getting for their money."

At last week's meeting, Dinegar and Montez distributed a document summarizing the task force's work and outlining the various operations housed at system administration. The four-page primer [2]will be made available at upcoming meetings with campus groups as well.

Among the examples of system administration efficiencies included:
University Treasurer saved $13.4 million by refinancing bonds. University Rick Management's Property/Casualty program saved about $4.3 million in the 2013 fiscal year. The University of Colorado Health and Welfare Trust, in collaboration with UPI, has saved CU employees millions of dollars through lower premium increases (5.5 percent, which is lowest among reporting universities) and pharmacy savings ($2.8 million in the most recent year).
In other business at last week's Faculty Council meeting:
Cathy Beuten, multimedia editor in University Relations, Office of the President, gave a presentation on social media and its current and potential uses across the campuses. An effort to encourage Twitter use a the recent CU Women Succeeding symposium was deemed successful. Todd Saliman, , vice president and chief financial officer for the university, provided a strategic planning and budget update similar to one he presented at last month's Board of Regents meeting[3].

Five questions for Margarita Bianco[4]

Margarita Bianco with kids in the Katanga slum in Uganda.

Even in high school, Margarita Bianco knew she wanted to be a teacher: Volunteer work with a young boy who had significant support needs piqued her interest in special education. Over the years, she also developed an expertise in gifted education.

Now, as an assistant professor in the University of Colorado Denver's School of Education and Human Development, she is taking all that she has learned – including some life lessons – and is working to inspire others to be educators.

One way in which she's attracting youth to the profession is through a program she has developed. Now in its third year, the Pathways2Teaching[6] program offers diverse urban youth the opportunity – and college credits – to explore teaching and related professions. By the end of this year, nearly 200 high-school students from three Denver high schools will have earned three college credits and gained a better understanding of educational justice.

In the coming years, Bianco hopes to expand the program to more Denver high schools and other school districts in Colorado. She's in the early stages of developing a "train the trainer" model so that districts around the country can replicate the program.

1. Why did you develop the Pathways2Teaching project?

This is a program I'm passionate about and have devoted a lot of time and energy to. It was borne out of personal and professional frustration with a number of issues – especially those around the widening access gap for students of color and the systematic failure we have in American public schools to effectively educate students of color. One of the ways we can address that is by diversifying our teacher workforce. That's not the only answer, but it is one way to begin to tackle this problem. Data shows that in Colorado, while we have a Latino community that is the second-largest population in state, 90 percent of the state's teachers are white.

Margarita Bianco with Luke, a Pathways2Teaching student, on his high school graduation day in 2011.

The issues of opportunity and access are huge. For many students of color, there is a spiraling effect in terms of all the barriers that are created right from primary schools to graduating from high school. For instance, gifted students of color, especially those who live in poverty, don't have access or opportunities to participate in things like advanced placement classes or don't have exposure to high-end curriculum so they will be prepared to engage in gifted classes.

The Pathways2Teaching program is very successful. We have a 100 percent graduation rate for all of our seniors so far. We really encourage our students to examine educational disparities they've experienced and critically examine why they've had this lack of opportunity and hopefully engage them in trying to disrupt some of these inequities by trying to become a teacher.

2. What taught you how to teach or be a teacher?

After graduating from high school, I was a teacher's aide and worked in a special school for children who are deaf and blind and have intellectual disabilities. I was assigned to work one-on-one with a 12-year-old boy all day, every day for a full academic year. We were working on things like teaching him sign language as a way for him to communicate his needs and wants and daily living skills. He taught me how to be an effective teacher, because with him, I needed to learn to break down every skill into its most intricate detail. I learned how to teach in sequence. I couldn't jump to Skill B until I knew he had mastered Skill A. So that taught me how to look at every skill and how skills build on each other.

Beyond the technical aspects, I learned from him the power of really loving my students and wanting them to be successful and self-determined in their lives.

An event that had an impact on me both personally and professionally was becoming a mother. From that point forward, I viewed my role as a teacher differently and I view teachers differently. Now I have a personal connection and understanding with other parents about what we want for all our children, and that was something I only had superficial knowledge of before. That doesn't mean that all teachers have to be parents to be effective, but for me, it changed my perspective of the important role that teachers have and my role in helping them.

3. What characteristics make a great teacher? Can these be taught or are they innate?

From my own perspective, one of the things a teacher has to have is high expectations for all students. They also have to have the skills, knowledge and disposition to help their students achieve those high expectations. A great teacher has to have a deep understanding of cultural differences and what it means to be a culturally responsive teacher. They also must have the skills and knowledge to engage their students in critical and deep thinking. It's a question I have my high school students address, too. They'll say that a great teacher is someone who's demonstrating that they care. That's a word that comes up a lot when I ask that question. By caring they mean somebody they can trust; someone who is there for them when they need to talk before or after school or at lunch. My students also want teachers who challenge them and make them do their work and not let them fail.

4. What would you consider one of your greatest achievements? What about a disappointment that you learned from or saw as a turning point?

On a personal level, I am proud of my son and the role I've played in being his mother. He's a freshman at Columbia University and is doing really well. It's fun to watch him grow into the man he's becoming. Professionally, it has to be the Pathways program because I've seen a tremendous impact in a very short time and I look forward to seeing it grow over the next few years.

There also was a negative event that had a huge impact on me. During my senior year in high school, I had a school counselor tell me that I shouldn't apply to college because he didn't think I was college material. Hearing those words really shook me to the core. I knew I was bright; I knew I was talented and very capable. Here is a man in a position of authority and power telling me I wasn't college material. Luckily, I didn't believe him. After I had completed my undergraduate work, I applied to Columbia for graduate school. The day I received my acceptance letter, I drove to my high school to find him. I walked into his office and reminded him who I was and what he had told me years earlier. I left my acceptance letter on his desk.

I tell this story to my students for a number of reasons. I want them to understand the power of their words and how one comment can change the trajectory of somebody's life. When I received the Rosa Parks Diversity Award, I told that story and dedicated the award to my school counselor. It wasn't his intention, but he really motivated me to prove him wrong. And I dedicated it to all those students of color out there who, despite their intellect and abilities, have teachers who don't believe in them. I hope my story encourages them to prove their teachers wrong, too.

5. Your work in education also extends to Africa through the Global Livingston Institute. How are you helping overseas?

I'm working with the Global Livingston Institute to build partnerships with faculty from a university in Uganda. Last fall I had the opportunity to be a guest speaker and meet with upper-level grad students, and last summer, some of our Pathways2Teaching students had the opportunity to visit. We're in the early stages of creating a research agenda looking at the professional development needs of teachers in urban and rural communities in Uganda. I'm particularly interested in a school in northern Uganda that works with former child soldiers.

Mullis slated for annual CU Advocacy Day[8]

March 22 has been set as this year's CU Advocacy Day at the Capitol, when leadership from the state and the University of Colorado invite the public to learn more about funding trends and legislative priorities affecting CU and higher education.

Special guest speakers include Natalie Mullis (CU-Boulder '94, '98), chief economist from the Colorado Legislative Council Staff.

The 9 a.m.-noon event, hosted by the Office of Government Relations and CU Advocates Program in the Office of the President, is followed by a lunch reception from noon-2 p.m. Registration[9] is required for both events.

The day's program promises to prepare attendees to promote the university's educational, research and economic contributions, as well as raise awareness about the state's and CU's funding challenges.

Advocates for CU will learn about:
Funding trends for public higher education Higher education economic development Legislative priorities How to advocate and work with legislators
The advocacy lunch reception will feature CU President Bruce D. Benson, campus chancellors and state elected officials.

The 9 a.m. event takes place in the State Capitol House Committee Room 112. The lunch is at First Baptist Church, 1373 Grant St., across from the Capitol at Grant Street and East 14th Avenue.

More information and registration is available at the CU Advocates website[9].

Questions: Michele McKinney, 303-860-5622, michele.mckinney@cu.edu[10].

Study: Volcanic aerosols, not pollutants, tamped down recent Earth warming[11]

A new study led by the University of Colorado Boulder indicates emissions from moderate volcanoes around the world – such as the Augustine Volcano in Alaska – can mask some of the effects of global warming. Image courtesy U.S. Geological Survey

A team led by the University of Colorado Boulder looking for clues about why Earth did not warm as much as scientists expected between 2000 and 2010 now thinks the culprits are hiding in plain sight -- dozens of volcanoes spewing sulfur dioxide.

The study results essentially exonerate Asia, including India and China, two countries that are estimated to have increased their industrial sulfur dioxide emissions by about 60 percent from 2000 to 2010 through coal burning, said lead study author Ryan Neely, who led the research as part of his CU-Boulder doctoral thesis. Small amounts of sulfur dioxide emissions from Earth's surface eventually rise 12 to 20 miles into the stratospheric aerosol layer of the atmosphere, where chemical reactions create sulfuric acid and water particles that reflect sunlight back to space, cooling the planet.

Neely said previous observations suggest that increases in stratospheric aerosols since 2000 have counterbalanced as much as 25 percent of the warming scientists blame on human greenhouse gas emissions.

"This new study indicates it is emissions from small to moderate volcanoes that have been slowing the warming of the planet," said Neely, a researcher at the Cooperative Institute for Research in Environmental Sciences, a joint venture of CU-Boulder and the National Oceanic and Atmospheric Administration.

A paper on the subject was published online in Geophysical Research Letters, a publication of the American Geophysical Union. Co-authors include Professors Brian Toon and Jeffrey Thayer from CU-Boulder; Susan Solomon, a former NOAA scientist now at the Massachusetts Institute of Technology; Jean Paul Vernier from NASA's Langley Research Center in Hampton, Va.; Catherine Alvarez, Karen Rosenlof and John Daniel from NOAA; and Jason English, Michael Mills and Charles Bardeen from the National Center for Atmospheric Research in Boulder.

The new project was undertaken in part to resolve conflicting results of two recent studies on the origins of the sulfur dioxide in the stratosphere, including a 2009 study led by the late David Hoffman of NOAA indicating aerosol increases in the stratosphere may have come from rising emissions of sulfur dioxide from India and China. In contrast, a 2011 study led by Vernier -- who also provided essential observation data for the new GRL study -- showed moderate volcanic eruptions play a role in increasing particulates in the stratosphere, Neely said.

The new GRL study also builds on a 2011 study led by Solomon showing stratospheric aerosols offset about a quarter of the greenhouse effect warming on Earth during the past decade, said Neely, also a postdoctoral fellow in NCAR's Advanced Study Program.

The new study relies on long-term measurements of changes in the stratospheric aerosol layer's "optical depth," which is a measure of transparency, Neely said. Since 2000, the optical depth in the stratospheric aerosol layer has increased by about 4 percent to 7 percent, meaning it is slightly more opaque now than in previous years.

"The biggest implication here is that scientists need to pay more attention to small and moderate volcanic eruptions when trying to understand changes in Earth's climate," said Toon of CU-Boulder's Department of Atmospheric and Oceanic Sciences. "But overall these eruptions are not going to counter the greenhouse effect. Emissions of volcanic gases go up and down, helping to cool or heat the planet, while greenhouse gas emissions from human activity just continue to go up."

The key to the new results was the combined use of two sophisticated computer models, including the Whole Atmosphere Community Climate Model, or WACCM, Version 3, developed by NCAR and which is widely used around the world by scientists to study the atmosphere. The team coupled WACCM with a second model, the Community Aerosol and Radiation Model for Atmosphere, or CARMA, which allows researchers to calculate properties of specific aerosols and which has been under development by a team led by Toon for the past several decades.

Neely said the team used the Janus supercomputer on campus to conduct seven computer "runs," each simulating 10 years of atmospheric activity tied to both coal-burning activities in Asia and to emissions by volcanoes around the world. Each run took about a week of computer time using 192 processors, allowing the team to separate coal-burning pollution in Asia from aerosol contributions from moderate, global volcanic eruptions. The project would have taken a single computer processor roughly 25 years to complete, Neely said.

The scientists said 10-year climate data sets like the one gathered for the new study are not long enough to determine climate change trends.

"This paper addresses a question of immediate relevance to our understanding of the human impact on climate," said Neely. "It should interest those examining the sources of decadal climate variability, the global impact of local pollution and the role of volcanoes."

While small and moderate volcanoes mask some of the human-caused warming of the planet, larger volcanoes can have a much bigger effect, Toon said. When Mount Pinatubo in the Philippines erupted in 1991, it emitted millions of tons of sulfur dioxide into the atmosphere that cooled the Earth slightly for the next several years.

The research for the new study was funded in part through a NOAA/ ESRL-CIRES Graduate Fellowship to Neely. The National Science Foundation and NASA also provided funding for the research project. The Janus supercomputer is supported by NSF and CU-Boulder and is a joint effort of CU-Boulder, CU Denver and NCAR.

Regents, local leaders on hand for state funding discussion at UCCS[13]

CU Regent Sue Sharkey speaks at a meeting of the CU Advocates while event organizer Michele McKinney stands by.

Twenty years ago, a student at any CU campus paid for roughly one-third the cost of his or her education. The balance came from the state of Colorado.

But today, the situation is exactly opposite – the student and supporting families can expect to pay two-thirds with the state only contributing one-third.

Todd Saliman, vice president and chief financial officer for CU, and Brian Burnett, UCCS senior executive vice chancellor, Administration and Finance, explained the shift in state funding priorities to a group of 60 who attended a Feb. 27 meeting of the CU Advocates[15] in the University Center. Attendees included CU Regents Kyle Hybl and Vice Chair Sue Sharkey, as well as Colorado Springs City Council Member Val Snyder, former Colorado state Sen. Andy McElhany and campus benefactors Ed Osborne and Tom Saponas.

“Forty-eight is not a statistic we should be proud of,” said Sharkey, referencing Colorado’s ranking among the 50 states for funding of higher education.

For almost an hour, Burnett and Saliman drove home points about the lack of state funding, efficiencies that CU has undertaken, the growth of other government spending in other areas and the value of a CU degree as measured in higher individual incomes and lower unemployment rates.

Brian Burnett speaks at a meeting of the CU Advocates while Todd Saliman waits for his turn.

While Burnett and Saliman live the numbers, their task last week was to demonstrate to others how the shifts will soon affect Coloradans and put the cost of attending CU out of reach for low- and middle-income families.

“State support is going down while enrollment is going up,” Burnett said. “This has been a huge challenge for us.”

Saliman explained that only 5 percent of the CU budget comes from the state of Colorado; for UCCS, the figure is 10 percent. In only a few years – possibly as early as 2018 – those numbers will be zero.

“The state won’t have enough money to pay for things it has to pay for,” Saliman said. “And it doesn’t have to pay for higher ed.”

While topics such as eliminating or changing TABOR, increasing private donations, and even a ballot issue to support higher education were raised by audience members Wednesday, there were no tangibles to point to. State leaders are talking, however, about options.

“The value of higher education in Colorado is not a self-evident truth,” said Michele McKinney, advocacy and external affairs director, who organized the event. “But today, we made an installment on changing that.”

In coming weeks, similar presentations will be conducted at other CU campuses[17]; the next one is set for Tuesday at CU-Boulder.

Pension studies examine surplus deferred compensation[18]

Mannino

A series of studies by two University of Colorado Denver Business School professors indicate a large level of surplus deferred compensation and near-retirement salary growth among both K-12 and university employees.

Overall, the three studies point to potential conflicts between agents managing employee compensation and taxpayers providing the benefits. At the very minimum, the studies suggest, improved oversight is needed for these pension plans. With state and local public employee defined benefit public pension plans facing underfunding problems, many state and local governments are considering ways to reduce large deficits.

The first two studies used data sets of retiree characteristics and salary histories from two groups -- non-faculty university employees (278) at the University of Colorado Denver, University of Colorado Boulder and Metropolitan State University of Denver and K-12 Denver Public Schools retirees, all of whom retired between 2001-06. The K-12 retirees were members of the Denver Public School Retirees System, which was a separate retirement plan for all K-12 retirees. Now it is a division of the Colorado Public Employees' Retirement Association[20] (PERA) defined benefit pension plans.

Prompting the studies was the fact that deferred retirement compensation is a major component of defined benefit pension plans, but hadn't received much study, not even by the PERA Commission, said Michael Mannino, Ph.D., associate professor of information systems in the Business School. Surplus deferred compensation is defined, simply, as a retiree getting more out of a pension than was put in, he said.

"I wanted to get some idea of the private-sector valuation of the pension benefits, and compare that to what was really put into the plans by both the employee and employer," he said. "I think an understanding of that comparison is essential to construct reasonable policy."

Cooperman

The studies by Mannino and Elizabeth Cooperman, professor of finance, showed a large gap between the Colorado Department of Personnel and Administration's value of a retiree's defined retirement benefits and a private-sector valuation. "I came up with a method of doing a private-sector evaluation of the pension value. In other words, how much it would cost to purchase that pension in the private sector at retirement."

In the data sets, he said, the average surplus deferred compensation -- the additional amount needed to purchase an annuity above what was available at retirement from employer and employee contributions invested at historical rates -- was more than $500,000, or generally 25 to 35 percent in additional compensation.

Taxpayers are essentially on the hook for the additional amount. "The employer's contribution in the plan valuation was historically around 10 to 12 percent through PERA, but what the study showed is that you should actually add another 25 to 35 percent," Mannino said. "So, essentially, you're looking at retirement contributions by the taxpayer of about 35 to 45 percent, if you count the 10 percent that is already there."

Data sets used in the three studies are unique, Mannino said, as other researchers and the Colorado State Treasurer have not been able to obtain comparable data. The first two studies were published in the Journal of Pension Economics and Finance[22].

In the latest study, currently under journal review, Mannino and Cooperman focused on benefit enhancement -- various ways an employee increases retirement benefits near his or her retirement date. Methods of spiking pensionable income include salary growth near retirement, excessive overtime, adding unused vacation and sick time, adding uniform allowances, and enhancing education, such as an advanced degree.

Mannino and Cooperman used diverse sources of evidence, including reports on pension benefit enhancement in the financial press; a survey of managers of state and local public employee pension plans; and an empirical evaluation of two unique data sets of retiree characteristics and salary histories. Read the study abstract here[23].

Using the unique data sets already procured on retirees and salary histories, they compared wage growth in the several-year period used to determine final average pay with the Consumer Price Index (CPI) and other wage indexes. "I compared the actual geometric growth of the compensation -- the salaries -- in that period compared to these indexes," Mannino said. "I found a pretty good surplus there, indicating there was some level of, you might say, pension spiking or enhancement of benefits. But the employer wasn't paying attention."

For administrators, the average salary growth rate in the five-year period (2001-06) was about 7 percent, Mannino said. For professionals and non-professionals in the data sets, growth rates were about 4.7 and 4.4 percent, respectively. Meanwhile, the CPI growth rate in the same period was about 2.3 percent. "So, for administrators (the growth) was almost three times the CPI and for the other groups it was about 2 times."

The most surprising part of the study was the dominance of professional and non-professional employees with extreme salary growth in the five-year period before retirement. According to the study, "The top 10 outliers (0.196 to 0.520) contained only professional and non-professional retirees. In addition, the non-professional class contributed a reasonable number of extreme and mild outliers. Thus, the results from the distribution of salary growth and outliers indicated widespread principal-agent conflict, not limited to administrative employees."

Mannino said this principal-agent conflict can circumvent a primary advantage of defined benefit pension plans -- the ability to retain personnel with low costs during the near-retirement period. "Special pension enhancement provisions that allow employees to boost salaries near retirement to enhance future pension benefits provide incentives for opportunistic employees to game the system, often resulting in higher future employee and employer contributions to cover future underfunding," Cooperman noted.

The state pension bill passed in 2009 addressed some of the issues by stretching the salary period and placing more limitations on salary increases in the pension calculation period, Mannino said. However, the study concludes, there should be better oversight associated with large salary growth that occurs just outside the pension benefit calculation period. An even better policy is to consider defined contribution pension plan now provided for many exempt employees at CU Denver, the study suggests.

Abstracts of the first two studies published in the Journal of Pension Economics and Finance:
Surplus deferred pension compensation for long-term K-12 employees: an empirical analysis for the Denver Public School Retirement System and four state plans[24]. Deferred compensation for career employees in public defined benefit pension plans: evidence from Colorado PERA[25].

CU-Boulder fundraising leaders fund $2 million jazz studies endowment[26]

Jeannie and Jack Thompson

Jeannie and Jack Thompson have made an unprecedented commitment to the Jazz Studies program at the University of Colorado Boulder -- building $1.6 million in combined gifts to trigger a new $2 million program endowment.

To honor and recognize this transformational gift, the program will be renamed the Thompson Jazz Studies Program, as announced at Sunday’s annual Spring Swing big band concert. It is CU-Boulder’s first named program.

Program Chair John Davis expects the endowment to strengthen the Thompson Jazz Studies Program’s ability to support guest artist residencies, professional recordings of CU jazz ensembles and travel for national competitions -- all of which will expand the program’s caliber and reputation. Since being established at CU-Boulder in 1996 with graduate offerings, the Thompson Jazz Studies Program has become a vibrant, versatile and highly regarded program with an undergraduate major, a doctoral degree and more than a dozen awards for student recordings from leading jazz publication Downbeat.

And all this for a program that did not exist when Daniel Sher became College of Music dean in 1993.

During Sher's 20-year tenure, the college has established the nation's first Entrepreneurship Center for Music, has enhanced its endowment and degree offerings, and has been cited among the top 25 U.S. music programs. The Thompson Jazz Studies Program endowment is another achievement as he retires this June, and it positions the college well for a new dean; finalists for the position were announced on Feb. 20.

"The Thompsons have always been great supporters of the College of Music," says Davis, who also is the college's associate dean of administration. "They've created a lot of opportunities for our students, and with their support our program has gone from one of moderate visibility to one that has become a national player."

The Thompsons also have led an effort to attract matching gifts for the endowment.

"Jazz is a truly unique American art form, and there aren't very many of those," Jack Thompson says. "We couldn't conceive of a place where Glenn Miller came from not having a vibrant and vigorous jazz program."

CU's jazz lineage includes Miller, who attended CU-Boulder before becoming a big band pioneer known for such classics as "In the Mood."

The endowment will generate annual distributions of unrestricted funds (roughly $80,000 a year, when fully in place), which Jazz Studies leadership can use at their discretion.

Jeannie (Zool'64) and Jack (Hist'64, MA'70) are the CU-Boulder chairs for CU's $1.5 billion Creating Futures campaign, and have donated to more than a dozen CU programs, indicating a powerful mixture of broad interests and institutional loyalties. They first met at the Sink as students in the early 1960s.

In 2005, they endowed the Thompson Awards for Western American Writing at the Center of the American West. In 2008, they gave $2 million toward the Jennie Smoly Caruthers Biotechnology Building, where a vaccine development research neighborhood is named in their honor.

"As Creating Futures campaign chairs for the Boulder campus, our hope is to show that donors have multiple interests," Jeannie Thompson says. "When you look at the breadth of the University of Colorado, there are so many programs worthy of support. We hope this gift will spur the campaign forward and help donors see the many ways they can make a difference."

New 3-D printer could revolutionize biomedical research[28]

From left, Jacob Segil, doctoral student in mechanical engineering at CU-Boulder; Richard Weir, Ph.D., associate research professor in the Department of Bioengineering at the University of Colorado Denver | Anschutz Medical Campus; Matthew Davidson, doctoral student in bioengineering at CU Denver | Anschutz Medical Campus; and Nili Krausz, graduate student in mechanical engineering at CU Denver | Anschutz Medical Campus, stand next to the new 3-D metal rapid-prototype machine in the Research Institute Laboratory.

Three-dimensional printing technology that President Obama touted in his recent State of the Union speech is already being used in a University of Colorado Denver | Anschutz Medical Campus laboratory.

Now, thanks to a $600,000 capital equipment grant from the Veterans Administration, the CU Denver | Anschutz Medical Campus/VA Biomechatronics Development Laboratory is home to an even more cutting-edge 3-D printer: a laser metal sintering machine.

Richard Weir, Ph.D., a leading researcher in robotic technology for arm amputees, said the fabricator will allow his

research team to develop better components -- created faster and less costly -- for prosthetic fingers, hands and arms. Weir, an associate research professor in the Department of Bioengineering, College of Engineering and Applied Science, also envisions creating a prototyping center as a resource for other university and VA researchers.

"It's a whole new way of thinking about how to make things," Weir said. "... The revolutionary aspect is to be able to do stuff that you can't using conventional technology. There is the possibility to fabricate impossible-to-machine components and to explore whether that confers advantage to the designs we're working on."

While 3-D plastic printers have been available for many years, metal printing is still "a very nascent technology," Weir said. He estimates that only a couple dozen of the devices -- called direct metal laser-sintering machines and built by German-based EOS e-Manufacturing Solutions [30]-- are being used in the United States, mostly for biomedical and aeronautical applications.

Weir first saw a 3-D metal rapid prototype machine being used to create cranial implants -- custom titanium plates in the shape of the human skull -- at a laboratory at North Carolina State University. "When I saw that I said, 'I want one of those.'"

He got his wish in 2011 when the VA, well aware of Weir's pioneering research that could benefit veteran amputees, funded, through a Capital Equipment Grant, the purchase of one of these machines. His lab had already been using a 3-D plastic printer, but a metal prototyping machine dramatically expands the horizons for their prosthetic designs.

"That's what we have a need for when we're building our small hands," said Weir, whose Implantable MyoElectric Sensors work will be tested in clinical trials[31] this spring. "We have all of these tiny parts that need to be very strong, and a lot of times steel turns out to be the best material to work in. If we want, we can change the machine's set-up, for a fee of course, that will allow us to print in a different metal. We can print in titanium, nickel, magnesium, cobalt."

Weir and his team, which includes graduate students from the CU Denver | Anschutz Medical Campus College of Engineering and Applied Science (Matthew Davidson and Nili Krausz, bioengineering and mechanical engineering departments) and University of Colorado-Boulder (Jacob Segil, mechanical engineering), saw the EOSINT M270 arrive from Germany in late 2011. Weir received a $250,000 discount on the reconditioned machine because it had been used in an EOS facility.

But they had to wait a year to pull it out of storage while space was prepared for it in the Research Institute where Weir's lab is located, in the basement of Children's Hospital Colorado[32].

The machine uses a three-dimensional digital image to methodically laser-sinter beads of metal powder into solid metal. Most components will be built overnight in the machine, which has a door -- much like a microwave oven -- that allows manufacturers, or in this case researchers, to view the progress of each iterative design.

Segil said the machine creates a "whole new modality" to turn ideas into reality, especially in the tricky area of anthropomorphic design. "For things that don't have hard edges, like our bodies, it makes a world of difference," he said. "To (create) something like our finger, which has curvature and intricacies, out of metal is a horribly difficult and expensive thing to do using conventional machining processes. Now we have a machine to do it."

Weir said he'd like to make the metal prototype machine accessible to other researchers, as has been done with the plastic 3-D printer. "We have a lot of rapid-prototyping capability within three or four rooms here. Our hope is to start a sort of prototyping center."

Meanwhile, the president hailed 3-D printing technology in his recent State of the Union speech, saying it "has the potential to revolutionize the way we make almost everything." Obama said an innovative manufacturing institute has already launched in Youngstown, Ohio[33], and he's pushing for as many as 18 such facilities around the nation.

Weir said it will be a process to learn all of the new machine's capabilities. "We will print a part, but it won't necessarily be a finished part," he said. "There's a post-finish process we have to do to clean up a part before it's usable. How much of that we need to do we need to discover."

He pointed out that the university's newly formed Bioengineering Department[34] will begin an undergraduate program this fall. The program will include a design track that will train students to be able to take advantage of such cutting-edge rapid-prototyping equipment.

No one immune from cyberattack[35]

Many people mistakenly believe that cybercriminals do not target them – that their computer or information has no value. In reality, individuals like you are the cybercriminals' primary target: You and your computer are under attack every day.

The first step in protecting yourself is to understand that you are a valuable target.

For more on how cybercriminals target you and how you can protect yourself, see the March 2013 issue of the Office of Information Security Cybersecurity newsletter[36].

This IT Security Program APS[37] provides more information about the responsibilities of users as it relates to using IT Resources and protecting data.

Health and Wellness Center offers diet makeover[38]

Are you in need of a diet makeover?

In honor of National Nutrition Month, the Anschutz Health and Wellness Center (AHWC) wants to help you change your food attitude so you can Eat Right, Your Way, Every Day!

The Diet Makeover package includes:
24-hour Diet Recall analysis One-hour consultation with a registered dietitian Free breakfast or lunch at Bistro Elaia
Cost: $140 (a $50 savings). Offer expires March 31.

For more information, call 303-724-9030, email wellnessclinic@anschutzwellness.com[39]

or visit the AHWC website[40].

Leinwand receives grant for heart research[41]

[42]
Leslie Leinwand, chief scientific officer of the University of Colorado's BioFrontiers Institute, has been studying the motor protein, myosin, for 25 years. This important protein is responsible for making muscles contract, including one vital muscle: the heart. She recently won a $45,837 grant from the Children's Cardiomyopathy Foundation (CCF) to

study the differences in the myosin mutations in adult and pediatric populations. She also plans to look at the effects of a small molecule drug on the pediatric versions of the protein in a test tube. This small molecule drug has promise for treating adults with heart failure.

Myosin drives heart muscle contraction, and when this protein is mutated, it has devastating effects on the cardiovascular system. There are more than 300 known mutations in myosin, many of which cause a disease called hypertrophic cardiomyopathy. Hypertrophic cardiomyopathy is the most common genetic heart disease, occurring in 1 in 500 individuals, and it is the leading cause of sudden death in young people. In hypertrophic cardiomyopathy, the heart muscle becomes thickened in parts, forcing the heart to work overtime pumping blood throughout the body.

Many adults manage this disease successfully by avoiding strenuous, competitive exercise and using a pacemaker, but children with this disease don't have as many options as adults.

There are 1,000 to 5,000 new cases of pediatric hypertrophic cardiomyopathy diagnosed each year. The pediatric disease is relatively rare, with 12 children diagnosed out of every million; most patients are diagnosed before their first birthdays. Beyond the clear genetic causes, the other causes of the disease in children are not well-understood and research on the subject is sparse. Fewer than 25 percent of these childhood cases have an identifiable cause, despite standardized and rigorous testing.

Albino honored as Distinguished Psychologist in Management[43]

[44]
Colorado School of Public Health Associate Dean **Judith Albino** has been awarded the Distinguished Psychologist in Management Award for 2013 by the Society of Psychologists in Management (SPIM). Albino received the award Feb. 22 during the SPIM midwinter conference in Arizona. In her invited address, she spoke to the group on the topic of "Leadership Identity and Leadership Frames."

The Distinguished Psychologist in Management Award recognizes outstanding contributions to the practice of management by a psychologist. The award is presented to an individual who has developed, refined and implemented practices, procedures and methods that have a major impact on people in organizational settings and/or on the profession of management.

Albino, a health psychologist, is the school's Associate Dean for Strategic Planning and Development and Clinical Professor of Community and Behavioral Health. She currently is principal investigator and directs the Center for Native Oral Health Research. She also directs the senior leadership training program (LITeS) for the Colorado Clinical and Translational Sciences Institute. Albino served as the interim dean for the Colorado School of Public Health from 2011-2012 and is President Emerita of the University of Colorado.

Albino is among a small handful of higher education leaders selected to receive the award, which more often has been presented to psychologist/leaders from the corporate sector. Past recipients from higher education have included John Conger, former chancellor of the University of Colorado Health Sciences Center; Richard Atkinson, former president of the University of California; and Frances Horowitz, former president of Graduate Center of the City University of New York.

Spice, McPike take on new roles at UCCS[45]

[46]
Jim Spice, current executive director of the Department of Public Safety and chief of police at the University of Colorado Colorado Springs, will become executive director of the Department of Parking and Transportation Services

on April 1.

The move is part of plans to create separate leadership positions for Police Operations and the Parking and Transportation Services department.

Spice will be responsible for the operations of the university's parking lots, garages, shuttle buses, vehicle fleet, and future planning to serve campus parking and transportation needs.

[47]
Brian McPike, currently police lieutenant, will serve as interim executive director, Department of Public Safety, and chief of police.

Spice joined the UCCS Department of Public Safety in 1998 and served in various positions including police officer, corporal/parking manager, and sergeant before being named interim chief in 2006 and chief in 2007.

"With the growth of the campus, the job had really gotten too big for one person to do well," Spice said. "I am excited to have the opportunity to focus on campus parking and transportation issues and I look forward to meeting the challenges of a growing campus."

McPike joined the UCCS Department of Public Safety in 2008 and previously served in law enforcement positions with the Greenwood Village Police Department and the El Paso County Sheriff's Office. In addition to his Department of Public Safety duties, he also teaches criminal justice courses through Weekend University.

Kittelson thanked for six years of leadership of consortium[48]

[49]
John Kittelson, who spearheaded the effort to open a dedicated center for biostatistical consultation at the university, has elected to step down as director of the Colorado Biostatistics Consortium (CBC).

Kittelson, professor of biostatistics in the Colorado School of Public Health, also served as director of the Biostatistics, Epidemiology and Research Design (BERD) core of the Colorado Clinical and Translational Sciences Institute (CCTSI).

Soon after joining the faculty, Kittelson established the need, designed an operational plan and identified the funding strategy to open a dedicated center for statistical consultation. Previously, biostatistical consulting and collaborative support had been scattered and difficult for health sciences faculty to identify and utilize.

"Under John's leadership, the CBC's collaborations stretched across the school and Anschutz Medical Campus and provided valuable research collaborations for health science colleagues and outstanding training opportunities for our students," wrote David C. Goff Jr., dean of the Colorado School of Health, in a newsletter to colleagues.

Department of Biostatistics and Informatics Chair Dennis Lezotte, Ph.D., said that with the CBC's establishment in 2006 and subsequent emergence of the CCTSI grant, Kittelson led the organization and management of statistical services on campus.

"Through John's prior insights, leadership and dedication, I believe we have a well-established foundation from which the department and its faculty can launch additional support to all the major research programs, clinical investigations and academic units on campus," Lezotte said.

Lezotte will serve as interim CBC director until a permanent director is appointed. During the interim period the CBC will continue to provide research consulting services and collaboration for campus researchers.

Coolidge, Shull represent UCCS in India[50]

[51]
Fred Coolidge, professor in the Department of Psychology, and **Anthony Shull**, executive director, Office of International Affairs, recently participated in an Institute of International Education-led tour of India and its higher education institutions as part of the 2012-2013 International Academic Partnership Program.

Coolidge and Shull, representing the UCCS IAPP steering committee, joined representatives from Arizona State University, Portland State University, University of North Carolina at Charlotte, Washington and Jefferson College and IEE staff members in efforts to learn more about the Indian higher education system and explore potential partnership opportunities.

The five institutions were selected because of their commitment to developing long-term, strategic partnerships with counterparts in India with the goals of increasing student and faculty exchange, joint research, dual degree programs, study abroad and other partnership activities.

In addition to touring the various universities to learn about the Indian higher education system, the groups participated in roundtable discussions about obstacles to cooperation and specific discussions about areas of common interest and possible areas of collaboration.

Coolidge, who previously traveled to India as part of three Fulbright Fellowships, was able to provide guidance about Indian customs in addition to broad knowledge about the UCCS faculty and possible areas of collaboration.

Communication faculty, students participate at regional meeting[52]

Members of the Communication Department from Denver and Beijing participated in the annual meeting of the Western States Communication Association (WSCA) in Reno, Nev., Feb. 15-19. Associate Chair of Communication **Brian L. Ott** was honored as the president-elect of WSCA and became the association’s president. Ott organized the 2013 conference, "Going Global: Communication in the Network Era."

Colleagues **Stephen John Hartnett**, **Lisa Keränen** and **Patrick Dodge**, along with Donovan Conley, University of Nevada Las Vegas, co-organized a one-day pre-conference on “U.S.-China Communication in Age of Globalization” that brought together scholars from both nations, including International College of Beijing (ICB) instructor Supriya Karadapuram. All told, Communication faculty made more than a dozen presentations on topics ranging from visual communication to biosecurity discourse.

Several Communication graduate students and recent alums also presented their research. Among them, Rachael Thompson presented “The Disaster of Real Experience: Transforming Identity in The Memory Thief”; Harry Archer presented, “The Denial of Equipment for a Political Third Way in Brazil,” and Nicole Palidwor who participated in a panel honoring Hartnett as last year’s recipient of the Distinguished Teacher Award from WSCA. In addition, adjunct instructor **Erin Davison** received top paper recognition from the Instructional Practices Division for her research on communication and English Language Learning.

Dropping names ...[53]

Perkins

Komora

Vidali

Three award-winning UCCS faculty and staff will be recognized Wednesday at a reception. Those being honored are: **Robert Camley**, professor, Department of Physics. Camley was named a distinguished professor in October; **Anatoliy Glushchenko**, associate professor, Department of Physics. Glushchenko was named a winner of the Thomas Jefferson Award in January; **Drew Martorella**, executive director, Theatreworks. Martorella was named a winner of the Thomas Jefferson Award in January. … The University of Colorado Boulder's PhET, which provides educational simulations and is directed by **Kathy Perkins**, has been accepted as one of 38 new partners of 100Kin10, a multi-sector partnership addressing the national imperative to train 100,000 science, technology, engineering, and math (STEM) teachers by 2021. PhET, as well as other announced partners, are unified by a single, ambitious goal: to prepare all students with the high-quality STEM knowledge and skills to equip them for success in college and the workplace. … **Ann Komara**, associate professor and Chair of Landscape Architecture at the University of Colorado Denver, wrote an essay for a special issue of "Landscape Journal" examining the influence of Lawrence Halprin on the philosophy and practice of landscape architecture. Komara's essay is titled "Water Events: Flow and Collection in Skyline Park." The park was a signi?cant component of the Downtown Denver Urban Renewal Authority's work in 1970 for the revitalization of a 37-block area in the heart of the once thriving downtown. The article includes images of those early renderings. … **Amy Vidali**, assistant professor of English at the University of Colorado Denver, published "Hysterical Again: The Gastrointestinal Woman in Medical Discourse" in the Journal of Medical Humanities (34.1). This article suggests increased attention to how medical discourses of gastrointestinal (GI) disorder and distress are fraught with social assumptions and consequences by examining 19th-century and contemporary medical texts focused on chronic constipation and Irritable Bowel Syndrome (IBS). Her analysis of the representation of the gastrointestinal woman is shaped by disability studies scholarship, which encourages intervention in problematic medical discourses and more active shaping of discourses of chronic pain and illness by those who have these conditions. … **Lee Newman**, professor of environmental and occupational health, was named by Best Doctors Inc. to be among the top 5 percent of doctors in the U.S. A Denver subset of the list was published Feb. 22 as a supplement to the Denver Business Journal. Newman was listed as top doctor in the field of occupational medicine, along with Denver colleagues, Karen Mulloy, Karin Pacheco, Cecile Rose and David Albert Schwartz.

Links
[1] https://connections.cu.edu/stories/task-force-efficiency-reflects-progress-five-year-mark[2] https://www.cu.edu/policies/downloads/TFE-Outreach.pdf[3] https://connections.cu.edu/news/regents-consider-budget-options[4] https://connections.cu.edu/stories/five-questions-margarita-bianco[5] https://connections.cu.edu/file/5q-1png[6] http://www.pathways2teaching.com/[7] https://connections.cu.edu/file/5q-2png[8] https://connections.cu.edu/stories/mullis-slated-annual-cu-advocacy-day[9] https://www.cusys.edu/cuadvocates/2013_03-22_cudayatthecapitol.html[10] mailto:michele.mckinney@cu.edu[11] https://connections.cu.edu/stories/study-volcanic-aerosols-not-pollutants-tamped-down-recent-earth-warming[12] https://connections.cu.edu/file/ucbvolcanopng[13] https://connections.cu.edu/stories/regents-local-leaders-hand-state-funding-discussion-uccs[14] https://connections.cu.edu/file/uccscuadv1png[15] https://www.cusys.edu/cuadvocates/[16] https://connections.cu.edu/file/uccscuadv2png[17] https://www.cusys.edu/cuadvocates/outreach.html[18] https://connections.cu.edu/stories/pension-studies-examine-

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