

Our University

A NEWSLETTER FROM THE UNIVERSITY OF CALIFORNIA PRESIDENT FOR THE UC COMMUNITY



June 2009: Printer-friendly version

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Budget Update

California is facing one of the nation's most severe state deficits with projected shortfalls ranging above \$24 billion. Like everyone in California, UC will inevitably share in the pain of this dismal budget outlook.

The latest proposed state budget cuts to UC total nearly \$800 million for the 2008-09 and 2009-10 fiscal years. On June 1, President Yudof joined California State University Chancellor Charles Reed and California Community Colleges Chancellor Jack Scott in testifying before the Joint Legislative Conference Committee on Budget. The three detailed the consequences of the proposed cuts to the state's higher education systems.

While the budget situation is quickly changing, UC is moving forward in its efforts to deal with these funding challenges and to pursue further cost-saving strategies. Our University asked Vice President of Budget Patrick Lenz to talk about some of the key budget issues we're all facing.

What steps is UC taking to deal with the latest round of proposed state budget cuts?

"We're going to have to end up considering some pretty draconian budget reductions on top of cost-cutting measures that are already going on. All of the

campuses have cut back on faculty hiring, some by more than 50 percent. Low-demand programs are being eliminated and class size will increase. Campuses are having hiring freezes, layoffs and voluntary separation programs. UC San Diego has cut its work force by more than 800 positions. UC Riverside recently eliminated its vice chancellor for administration office and put its plans to open a School of Public Policy on hold. Those are just a few examples. Everyone is going to feel the pain of the state's budget crisis.

"At the same time, we're making our case to the Legislature. If we have to take a cut, it should be an unallocated cut so we can determine how best to fund critical programs. We've asked, for example, that funding cuts not target the academic preparation programs. The governor's May revise plan included a \$31.3 million cut specifically to UC's academic prep programs like MESA, EOP and Puente Project. We're asking that those programs not be singled out.

"There's also \$575 million in capital facilities projects that has been taken out of our budget. We think it's smart to restore it. This is for construction of campus facilities, deferred maintenance, upgrades to buildings. This is a very competitive bid environment. Projects can be constructed for 25 to 40 percent less than what they were. These projects create jobs. Every construction project we do is its own economic stimulus."

What's UC's biggest challenge?

"I think the challenge for UC is trying to serve all our students with a 10 percent or 20 percent cut. We have an over-enrollment of 11,000 students. That amounts to a \$121.8 million funding need on top of the actual budget cuts. We're doing our best to maintain the high quality of our academic programs, and preserving undergraduate and graduate education has to be our highest priority."

What do budget cuts mean for UC employees?

"Well, 80 percent of budget is spent on human capital. As President Yudof has said, given the magnitude of the proposed cuts everything must be on the table. For employees this could mean furloughs, salary reductions and layoffs. We've just imposed a 5 percent pay cut on senior managers."

How much can UC save with furloughs?

"It's hard to estimate the savings since we don't know which employees would be affected or how many. For every one day of furlough a month for every employee, we could save \$10 million in general funds. That's \$120 million in general fund savings in a year."

What are some other cost-cutting measures?

"More administrative savings, reducing travel, minimizing overtime, deferring equipment purchases. Restructuring at the campus level comparable to what we've done at OP to take advantage of administrative efficiencies. Given the magnitude of the problem, it's going to be a big challenge for the campuses."

Will there be more cuts to the Office of the President?

"The OP budget has been reduced by \$67 million and its work force by 30 percent. We're getting to a point where we would not have the ability to meet the needs of the system or the governor or the legislators if we don't have a fully functioning Office of the President."

Are there any other sources of revenue UC can tap?

"We may have to look at short-term borrowing. Our credit rating is better than the state's. Student fee increases are an option. UC did benefit from federal stimulus money, but the economic stimulus money is short-term and one-time in nature. And the problem is that the state's proposal to eliminate the Cal Grant program, which benefits the lowest-income students, undercuts severely the positive impacts of the economic stimulus for financial aid. At this point, everything is on the table. But with the proposed cut to Cal Grants, we would approach a fee increase very carefully.

"I think UC is a necessity for the economic vitality of the state and its future welfare. There are both short and extremely long-term benefits from supporting UC. The state has to do more. I'll very shortly have four children in higher education in California. I hope there is room for them. I'm immensely worried that we're on the verge of denying our young people an education. We're doing the state a disservice for the future by denying access. I'm worried about the future of California if we can't provide educational opportunities to well-qualified students."

Ask it!

Chances are there's something you've always wondered about, meant to look up or wished someone would explain. Now is your chance to satisfy that curiosity. E-mail your questions and we'll find the UC brainiac who can answer it. Science, health, culture, language - whatever your question, don't be shy. Just Ask it!

Q. I love seedless watermelon—but I wonder how future crops are germinated if they are seedless?

A. The development of seedless watermelons is an instructive story of how plant genetics can be used to produce a product that has high consumer value but that requires specialized seed production techniques.

The process starts back two generations with watermelon parents that have different numbers of chromosomes in their cell nuclei. Most watermelons have one pair of each chromosome. This is termed the 2X or diploid condition. Using special techniques to double the number of chromosomes, parent lines are developed that have two pairs of each chromosome, which is termed tetraploid (4X). These 4X plants are able to grow normally and also produce seeded watermelons.

To produce the seed for planting seedless watermelons, the seed company takes pollen from a normal diploid (2X) flower and crosses it to a flower on the tetraploid (4X) plant. This is generally done by hand. When the 2X flower makes pollen, it undergoes a type of cell division known as meiosis, in which the number of chromosomes is reduced by half, resulting in haploid (1X) pollen cells. The same process goes on in the development of the egg cells inside the female parts of the flower. Normally, when the pollen cell fertilizes the egg cell, each of them contributes one of each chromosome pair, and the diploid (2X) condition is restored. The fertilized egg then continues to develop into the embryo inside the seed.

In the case of seedless watermelon, the female plant is tetraploid (4X), so when its egg cells form following cell division, they have twice the normal number of chromosomes, or 2X. When these egg cells are fertilized by 1X pollen from the 2X male plant, the resulting embryos and seeds have three copies of each chromosome, or are triploid (3X). This does not prevent the formation of viable seeds and fruit, so these triploid seeds can be harvested once the fruits are mature. These are the seeds that are sold to be planted to produce the seedless watermelons.

However, when the triploid watermelon plants produce flowers, the cell division process that would produce the egg cells runs into a problem due to the 3X number of chromosomes. Since there is an odd number of chromosomes, it is not possible for them to be evenly divided among the daughter cells. This results in a failure to form functional egg cells, and therefore no embryos can develop. Sometimes one finds small white seed coats in seedless watermelons, but these are empty and do not contain an embryo.

As an added complication, the fruit normally will not continue to develop unless there is pollination, but the pollen formation process also fails in these triploid plants, so they cannot produce pollen themselves. In order to achieve pollination, a certain fraction of the field is planted with normal (2X) watermelon plants that supply viable pollen. Bees visit these flowers and carry the pollen to the 3X flowers, which stimulates fruit development even though they are not successful in fertilizing the defective eggs. Generally, the fruit shapes or rind colors of the 2X male and 3X female (seedless) fruits are different so that they can be easily distinguished in the field and workers will only harvest the seedless fruits for market.

Similarly, when home gardeners buy a packet of seedless watermelon seeds, it will contain seeds of both the female and the male (often colored so that it can be recognized), and they should be sure to plant some of each type to ensure the production of seedless fruits on the triploid female plants.

Kent Bradford is vice chair of the Department of Plant Sciences at UC Davis and director of the Seed Biotechnology Center.

Due to the volume of Ask it! submissions, not all questions can be answered online.

Read the Ask it! archive.

<http://www.universityofcalifornia.edu/news/article/21285>

Featured Campus: **Merced**

First Lady Michelle Obama gave inspiration and encouragement in her commencement speech to the Class of 2009, the first to attend four full years at UC's newest campus.

[Watch video highlights of this historic commencement.](#)



Systemwide News

World's largest laser opens

Lawrence Livermore National Laboratory is tapping the power of light at its National Ignition Facility in pursuit of new clean energy sources.

By Andy Evangelista

Scientists for decades have been hunting for ways to harness the enormous force of the sun and stars to supply energy here on Earth. The National Ignition Facility at the Lawrence Livermore Laboratory may spark the light at the end of the tunnel.

The facility was dedicated May 29 at a ceremony attended by Steven Koonin, under secretary for science at the U.S. Department of Energy, Gov. Arnold Schwarzenegger, Sen. Dianne Feinstein, UC Regent Richard Blum, UC President Mark Yudof and numerous state and national officials.

Roughly the size of three football fields, the facility houses the world's largest laser. Within the next three years, its 192 laser beams will deliver massive amounts of energy at a pea-sized target. That target, filled with hydrogen fuel,

will in turn release 10 to 100 times the power than the amount injected by the laser.

When all of the lasers' energy slams the target, it will generate unprecedented temperatures in the target materials – temperatures of more than 100 million degrees and pressures more than 100 billion times the Earth's atmosphere. These conditions are similar to those in the stars and the cores of giant planets. Igniting these conditions will create nuclear fusion, which is the reaction that gives the sun and the stars their immense power. Mimicking and controlling the highly volatile process – tantamount to creating a star in a laboratory – could lead to ways to produce plentiful clean and safe energy.

While demonstrating nuclear fusion as a viable means for abundant clean energy may be the most exciting offshoot of NIF research, another of its roles is to study the conditions associated with the inner workings of nuclear weapons.

The NIF is a cornerstone of a critical national security mission to ensure the reliability and safety of the U.S. nuclear stockpile without conducting underground testing. At NIF, scientists will be able to provide data for supercomputer simulations that replicate conditions that exist inside a thermonuclear weapon.

NIF experiments will also help scientists who are trying to understand the universe in many fundamental ways, including astrophysicists learning about the hot, dense interiors of large planets, stars and other phenomena.

Lawrence Livermore National Laboratory's mission is to ensure national security and apply science and technology to the important issues of our time. Lawrence Livermore National Security LLC, of which the University of California is a partner, manages the lab for the U.S. Department of Energy's National Nuclear Security Administration.

Andy Evangelista is coordinator of research communications at the UC Office of the President.

Green thumbs up for Victory Gardens

Master gardener Rose Hayden-Smith, a UC Cooperative Extension director, is helping revive the Victory Garden movement in America and gathering followers through her blogs.

By Alec Rosenberg

Rose Hayden-Smith believes in the power of planting a seed. Her goals are to encourage a national gardening movement and use gardening as a tool to teach children about food.



"Gardening is the gateway drug to engagement in the larger food system," said Hayden-Smith, director of the University of California Cooperative Extension's Ventura County office. "If you want to get kids interested in agriculture, gardening is a good way to start."

Hayden-Smith's phone is ringing off the hook with interest, as spring is prime time for gardening. She points local people to the Master Gardener Program, which is part of UC's outreach efforts to provide the public with expert gardening information. And she advocates nationally for gardening through her UC Victory Grower site. A U.S. historian by training, she has modernized the World War I and II movement that encouraged home gardens as a way to feed the nation for less, saving money for efforts to win the wars.

The Victory Grower has a simple message: "A garden for everyone; everyone in a garden." Having served as a 4-H youth development advisor and master gardener coordinator with UC's Division of Agriculture and Natural Resources, Hayden-Smith especially wants to get that message out to young people.

"It's a fabulous time to be gardening, and the University of California is front and center in this," Hayden-Smith said.

Rose Hayden-Smith
Director, Ventura County,
UC Cooperative Extension; Kellogg Food
and Society Policy Fellow 2008-09

[Victory Grower Web site](#)

[Victory Grower blog](#)

[Victory Grower on Facebook](#)

[Victory Grower on Twitter](#)

UC Master Gardener Program
530 754-6000
camastergardeners@ucdavis.edu

[Children's Garden Program](#)
UC Davis

[Common Ground Garden Program](#)
LA County Cooperative Extension

[School Gardens Program](#)
San Diego County Cooperative Extension

And the centerpiece of that effort is the Master Gardener Program, a partnership with UC, the U.S. Department of Agriculture and county governments. Master gardeners, who are university-trained volunteers, answer horticultural questions, develop educational materials and encourage people to be good land stewards – conserving water, reducing fertilizer use, composting green waste and landscaping for fire safety.

In California, the number of certified master gardeners has grown 40 percent within two years, accompanied by a jump in volunteer hours, said Pam Geisel, statewide academic coordinator for UC's Master Gardener Program. Forty-three California counties have Master Gardener programs, and 4,477 Californians are certified master gardeners. Certification isn't a cinch –

it entails 50 hours of class training over 16 weeks with a final exam. Class fees range from about \$90 to \$150, including course materials.

"In California, we're growing because there's tremendous interest," said Hayden-Smith, a 17-year Cooperative Extension veteran. "In Ventura, we can't accommodate everyone who wants to do it. We have to turn people away."

Meanwhile, Hayden-Smith encourages people to increase their connection to gardening. For new gardeners, she suggests that they begin with a small container garden on a patio.

"Grow some fresh herbs," she said. "You can do it on the cheap."

"If you have a little more space, you can do raised beds," she said. "It's easy. We teach kids how to do it."

For the more ambitious, "Go to a community garden and rent a spot and make some friends," she said.

Hayden-Smith's garden is filled with fruit trees: lemons, blood oranges, avocados and apples. She also grows herbs and tomatoes, has a raised bed with lettuce and is trying corn. Maintaining her garden has been difficult this past year and a half, as she travels often as a Kellogg Food and Society Policy fellow, advocating nationally for people to get involved in gardening. She recently visited Washington, D.C., to support the USDA's People's Garden, which will green a 6-acre plot on the National Mall.

An estimated 7 million gardens were started this year in the United States, according to the National Gardening Association. Hayden-Smith attributes the interest to a combination of food shortages, rising prices, environmental concerns, civic engagement, the eating local movement and the popularity of cooking shows. It also has helped that first lady Michelle Obama planted the first White House garden since World War II.

"The timing is right for the message," Hayden-Smith said. "Gardening is not a novelty. It is connecting people with the food system and with agriculture."

A Ph.D. candidate at UC Santa Barbara, Hayden-Smith has researched wartime gardens, or Victory Gardens, which were popular during World War I and II. To promote the role of gardens today, Hayden-Smith started the Victory Grower Web site, a mish-mash of gardening resources and history, with a gallery and public policy pieces. Hayden-Smith also has a Victory Grower blog and sites on Facebook and Twitter to spread the gardening message through social media.

"She's amazing," Geisel said of Hayden-Smith. "She's very innovative."

While skeptics question how much impact gardening can have, Hayden-Smith notes that in 1943, 40 percent of fruit and vegetables consumed in the United States were from school, home and community gardens.

"If we do this in an organized fashion, we can have significant results," she said.

With an infectious enthusiasm, Hayden-Smith has made it her mission to promote the growth of gardens.

"It is really my vocation and avocation," she said. "It's my personal calling."

Alec Rosenberg is coordinator of agriculture and natural resources communications at the UC Office of the President.

More News

Putting UC under Legislature's control is a non-starter

<http://www.universityofcalifornia.edu/news/article/21252>

UC forms Animal Welfare Advisory Council

<http://www.universityofcalifornia.edu/news/article/21219>

California K-12 schools get free access to UC online college prep courses

<http://www.universityofcalifornia.edu/news/article/21205>

UCTV enters LA cable market

<http://www.universityofcalifornia.edu/news/article/21164>

Staff Advisors to the Regents launch newsletter

<https://app.e2ma.net/app/view:CampaignPublic/id:28820.1967921414/rid:23422b22e9b4c43ce37a77fe76d435ef>

Inside UCOP:

Stories for and about Office of the President staff



Lights out!

UCOP's test of energy-efficient lighting has cut electricity use by 59 percent among staff using the new lighting. More energy efficiencies are ahead.

By Donna Hemmila

Mary Pineda uses an energy-efficient task light to illuminate her desk as part of a lighting demonstration

project.

Those who remember the energy crisis of the 1970s can recall stories of then-President Jimmy Carter walking around the White House turning off lights.

That simple strategy of just flipping the switch off when you don't need light still works today, only the methods are more advanced.

UC has been on the forefront of the smart building movement, designing lighting and ventilation systems that conserve energy use and reduce carbon emissions. Now the Office of the President is putting some of those innovations to use in our own Franklin Street building.

With help from the California Lighting Technology Center, based at UC Davis, UCOP is testing new approaches to electricity consumption.

On the ninth floor, the pilot project has reduced energy use by 59 percent. That is just for the half of the floor that the Business Resource Center occupies.

"We estimate that lighting represents 20 to 30 percent of all electric usage," said Dirk van Ulden, UCOP associate director of energy and utilities. "Once we convert the entire building lighting system, we should see an energy cost reduction of at least \$50,000 per year while improving visual comfort and contributing to UC's sustainable practices policy goals."

The first week of April, the fluorescent bulbs in the overhead light fixtures in the Business Resource Center were replaced with energy-efficient bulbs that cast a "daylight" glow rather than the harsh yellow of fluorescent tubes. The fixtures now hold only one bank of bulbs instead of the standard two. Each workstation has an LED task light and movable under-shelf lights with motion detectors to turn them off automatically when no one is in a cubicle. The UC Davis lighting center is funding the test.

About 54 people are using the new lighting system.

"There's no glare," said Mary Pineda. "It feels cooler when I come in from outside. I really like it because it's subdued but well-lighted. It's been a nice improvement."

Helen Valness, director of the Business Resource Center, said she really notices the contrast between the overhead lights on the other side of the floor and in the ladies room. She prefers the blue tone of the new lights and also finds them cooler.

But not everyone is thrilled with the change.

"At first everyone said they felt sleepy because it's darker," said Pin Luo. "But now we're getting used to it."

Van Ulden hopes to spread these innovative lighting technologies throughout the Franklin Street building and the UC system. The more of a market there is for these energy-saving products, he said, the more vendors are going to want to manufacture and market them.

"The problem has been the university develops these systems, but we're having a hard time getting people to adopt them," he said.

Van Ulden has estimated that throughout the UC system there are about 300,000 overhead fixtures in offices and classrooms that could be upgraded with more energy-efficient lights.

Soon UCOP employees will be able to tell just how much energy they're saving – or not.

Meters will be installed to measure real-time consumption on each floor, and that information will be displayed online and maybe in the building lobby.

Donna Hemmila is editor of Our University.

Bike to Work Day gets people pedaling

An estimated 40 UCOP people rode their bicycles to work on the May 14th event.

.By Donna Hemmila

For veteran bicycle commuters like Chris Orr, Bike to Work Day is a time to spread the fun around.

Winners of Bike to Work Day Raffle

Jon Bertsch, IR & C
Brian Ross, Budget Office
Kathleen Quenneville, General Counsel Office

"It's not the only day I ride a bike, but it's the only day I get to hang out and eat pancakes at city hall," said Orr, one of 16 UCOP Franklin Street employees who rode their bikes to work on May 14 for the 15th annual Bay Area Bike to Work Day. Nine of those bikers were first-timers.

Franklin Street bikers logged a total of 70 miles of pedaling. The longest ride was 7 miles, the shortest 2 miles and the average ride was 4.375 miles.

There were some longer hauls: Paul Weiss, executive director of Information Resources & Communications, rode 43 miles round trip from Walnut Creek to his 20th Street office. An estimated 40 UCOP people biked to work in Oakland that day, according to sustainability specialist Andy Coghlan.

The Office of Sustainability, with support from Executive Vice President Katie Lapp and Associate Vice President Michael Reese in the budget office, sponsored free bike tune-ups in the Franklin Street garage plus a chance to win a \$50 gift certificate to Missing Link Bicycle Cooperative in Berkeley.

"I think it's the only way I've ever commuted where people say 'I wish it were longer,'" said Orr, who rides a 10-mile, round trip from Berkeley to downtown Oakland every day.

Before coming to work at UCOP, Orr rode her bike from home to Jack London Square, where she boarded a ferry to a job in San Francisco. The exercise and camaraderie make the extra travel time worth it, she says.

Orr suggests novices who are interested in biking to work should find a buddy to ride with.

The 511.org Web site offers trip planning and other resources to aid in bike commuting. Those who work in the Franklin Street building can contact BuildingServices@ucop.edu and request access to the secure bike parking cage.

Coghlan has purchased spare bike tubes and tire spoons for flat tire emergencies. They are available near the bike cage. Anyone willing to donate a tire pump to the communal emergency flat tire kit should contact Coghlan at Andrew.Coghlan@ucop.edu.

Donna Hemmila is editor of Our University.

Register to participate in UCOP values-setting session

<http://www.universityofcalifornia.edu/news/article/21233>

What advice do you have for graduating students?

With commencement season upon us, Our University asked UC Office of the President Student Affairs staff members what advice they have for students who are graduating. Here's what they had to say.

Han Mi Yoon-Wu, admissions coordinator

"Keep your options open and be open to the various opportunities out there. The first thing you land on isn't going to be the last job you have."

Nina Moore, director of Student Academic Preparation and Educational Partnerships

"Explore every possible opportunity and keep your horizons wide open. Look for different possibilities for how to use your range of skills -- even if you have to

start at something where you don't use all the skills you worked so hard to learn. That could be a pathway to short-term survival and building long-term skills."

Don Daves-Rougeaux, high school articulation coordinator

"My advice would be not to limit your opportunity, whether it be work related or community service. If you can't find a job, don't sit on your butt. Go volunteer. Help a community group, work for a nonprofit."