University of California ciee SENTINEL

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Spring has well and truly sprung!

Issue number ten of the CIEE Sentinel contains research opportunities, Cal Day entertainment, and one particularly smart air flow sensor funded to the tune of $2.5 million dollars.

Read on for more details!

upcoming EVENTS

April 13th
CITRIS at Cal Day

April 18th
BERC Lecture: How Clean Energy can Boost Incomes in the Global South

in the NEWS

Building For An Uncertain Future: Miami Residents Adapt To The Changing Climate

EU Aims to be 'Climate Neutral' by 2050

CIEE NEWS

Funding Opportunity for Climate Mitigation Projects

In support of UC's Carbon Neutrality Initiative, the University is soliciting ideas from members of the UC community for off-campus projects that reduce greenhouse gas (GHG) emissions or sequester carbon. Under UC's Carbon Neutrality Initiative, the UC system has committed to reducing its net GHGs from its operations to zero by 2025. Excellent progress has been made to make our buildings more efficient and switch to renewable and clean energy supplies. To help UC bring its emissions all the way down to zero, we are seeking two types of carbon offset projects:

1) UC-initiated offset projects: UC seeks to build a portfolio of potential offset projects originating from UC research and educational programs, and is exploring the viability of supporting those projects with payments based on GHG emissions reductions achieved. UC is currently offering awards of up to $70,000 to help bring selected projects closer to implementation. Proposals are due by May 31, 2019.

2) Projects already on the carbon offset market: UC is looking for recommendations from faculty, staff, and students for projects currently available on the voluntary offset market that meaningfully reduce emissions and are otherwise sustainable. Recommendations will be reviewed as they are submitted.

We are particularly seeking offset projects that contribute to UC's mission by expanding or applying university research, offering educational opportunities, advancing understanding of climate solutions, providing health and social justice benefits, and directly benefiting the UC community and surrounding communities.

Based on preliminary conversations with faculty researchers throughout the system, we have high expectations that this offset program will further demonstrate the University of California's collective power to lead in generating replicable climate change solutions.

For additional information and to submit your ideas, please visit the Request for Ideas website.

In addition, please join us for an RFI workshop at UC Berkeley on Thursday, April 11, 1-2:30pm, Haas School of Business, Gerson Bakar Bldg - F320 - Koret Classroom.

Art Rosenfeld Award Applications Open

The Art Rosenfeld Award for Energy Efficiency is currently accepting submissions by graduate students in Ph.D., Masters, J.D. or professional programs who are committed to research on energy efficiency. Each year, the award aims to promote innovative research in technologies and policies that will enable a more resource efficient society. To this end, the Rosenfeld Award provides funding to one graduate student committed to technical, social science or policy research that can lead to reductions in the use of energy.

Prospective applicants must submit a resume/CV, Personal Statement (750-1000 words) describing their background and career interest in energy efficiency, and Plan of Action (750-1000 words) describing how the award could support their academic plans. All materials must be submitted to info@uc-ciee.org by Tuesday, April 30th. All qualified graduate students are encouraged to apply, and may view the application flyer here. The successful applicant will be selected for their academic merit, passion, and commitment to energy efficiency, with heavy weight given to the Plan of Action submission.

CIEE-Affiliated Interns Take Home First Prize in Energy Research Competition

Tec de Monterrey interns who worked with Dr. Sergio Castellanos at CIEE recently won 1st place in a competition held in Mexico, organized by the *Energy Cluster of Nuevo Leon*. Their work, based on their internship efforts, highlighted the importance of energy efficiency measures in the electricity sector, and quantified its economical benefits through a web portal design.

Congratulations to Edgar Ramirez, Gabriel Evangelista, and Daniel Gutierrez!

Picture (Left to Right): Daniel Gutiérrez Navarro, Edgar Ramírez Sánchez, Gabriel Evangelista Palma

around CAMPUS

From Berkeley News: For America's Cities, Housing Policy is Climate Policy

In an op-ed published in the March 25th issue of the New York Times, UC Berkeley energy expert Dan Kammen and state Senator Scott Wiener are blunt: “To solve the climate crisis, we have to solve the housing crisis.”

Noting California’s lead in addressing climate change, the two warn that the state’s progress is slowing because of a stubborn roadblock: emissions from the greenhouse-gas spewing cars and trucks are going up.

The solution, they say, is denser housing around transportation and work hubs to cut the number of vehicles on the road. Wiener has introduced a controversial bill in the California legislature — Senate Bill 50, the More HOMES Act — that would override local restrictive zoning by legalizing small to mid-size apartment buildings up to five stories near

job centers and near public transportation.

“Specifically, we need to make it easier for people to live near where they work and near public transportation, and that means actually allowing housing to be built in and near our job centers and near transit,” they write.

“California’s current system of allowing cities to systematically restrict or ban new housing where the jobs and transit are located — via restrictive zoning and impossible approval processes — leads to sprawl, crushing commutes, and increased carbon emissions.”

Wiener and Kammen promote the bill as a roadmap for other cities and states as they attempt to reduce pollution and climate-altering emissions. Governor Gavin Newsom seems to be onboard: his proposed budget would penalize cities that don’t meet housing targets with loss of state transportation revenues.

“If we can build more momentum for more homes near where people work and access transit, we can continue to reduce carbon emissions, in California and around the country, and make sure our progress continues apace,” they conclude.

The original story can be found [here](#).

CITRIS at Cal Day 2019

Cal Day is UC Berkeley’s annual ‘open house’ which welcomes students past, present, and future— as well as the broader Berkeley community— to explore a variety of free

events throughout campus. This year's Cal Day falls on April 13th from 9 am to 4 pm and will host many exciting activities, including special exhibits from our own CITRIS Foundry. Be sure to check out the CITRIS Tech museum, which will include prototypes, hands-on displays, and engaging demos on energy efficiency, smart devices for infrastructure and healthcare, sensor systems to reduce traffic, and video installations. CITRIS will also open doors at the Invention Lab, where they'll provide lab tours, and additional project displays, and demos of laser cutting, 3D printing, and specialized equipment. All CITRIS events will take place in Sutardja Dai Hall between 10 am - 2 pm.To see all the programming that CITRIS has to offer, click here.

BERC Lecture: How Clean Energy can Boost Incomes in the Global South

On April 18th from 6 to 7:30 pm, BERC and the Institute for South Asia Studies will be hosting a lecture to explore how clean energy innovations transformed access to electricity for millions in the global south. Guest speaker Abhishek Jain— from the Council on Energy, Environment and Water in India— will discuss the potential of solar irrigation pumps in unlocking commercial avenues and innovations in related renewable-energy-powered appliances. Through case studies of India's successful deployment of solar irrigation pumps, Jain offers insightful lessons on the energy-water-food nexus, financing, farmers' perceptions, and more for future sustainable deployment projects.

The event will take place on UC Berkeley Campus in Chou Hall, N440 and N444, and all audiences are welcome to attend. To RSVP for the event here.

Anemometer Project

For the return of the Monthly Spotlight, we've chosen a project that has made waves, earning approximately $2.25 million dollars in funding no less: the Anemometer project, which has just concluded. Dr. Therese Peffer managed this California Energy Commission funded project for the Center for the Built Environment, which developed a

low-cost sensor for measuring airflow in buildings.

The Heating Ventilation and Air Conditioning (HVAC) systems in most office and commercial buildings do not operate optimally, wasting energy of which up to 60% is related to air flow. This project developed a new low-cost air-flow sensor, or anemometer, to identify the actual flow of air in rooms and in ducts. These anemometers can assist in early detection of operational issues and can help optimize the performance to improve comfort and reduce energy. If successfully commercialized and installed, these anemometers have the potential to reduce the energy use of almost all commercial HVAC systems in California.

An anemometer, designed for usage in rooms.The room anemometer consists of four ultrasonic transceivers 60 mm apart in a tetrahedron configuration to measure airspeed and direction.

To fill this void, two anemometer designs were developed: a small, inexpensive sensor that measures air speed and direction in rooms, and one that measures volumetric air flow in HVAC systems. The anemometer does not need to be calibrated, and the Chirp Microsystems' tiny ultrasonic CH-101 sensors are less susceptible to dusty environments; the room anemometer is accurate down to 0.05 meters per second air speed. An anemometer can transmit data collected both through a wire or wirelessly, and either USB-power or, with a sample rate of one per twenty seconds, will last up to ten years on a single D-cell battery. And, remarkably, the estimated cost of these anemometers is about $100-$120 dollars, depending on whether they're equipped with four or six sensors each. This combination of factors: its low cost leveraging semiconductor manufacturing, its

accuracy, and applicability in dirty environments makes it disruptive for air flow monitoring systems. A hearty congratulations to Therese, Prof. Ed Arens, and the rest of the Anemometer team!

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