Strategic Communication to Achieve Carbon Neutrality within the University of California

Report of the TomKat Strategic Communication Working Group

Appendices

July 5, 2018

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6.1. Audience-Focused Research Methods and Findings

6.1.1. Administrative Interviews

We conducted 30 interviews with staff across offices of sustainability, energy, facilities, and other related administrative units across 9 campuses*. All interviews were transcribed and coded thematically. Codes were developed using a combination of a priori coding and emergent coding, with four coders developing the initial system, and two coders continuing the process and comparing findings across all interviews. Each interview was coded twice, once by each interviewer, and checked to ensure that coding was consistent.

Several major thematic categories emerged, which include (in no particular order):

- Perceived barriers to implementing the CNI
- Perceived opportunities for implementing the CNI
- Reflections on the organizational structure and culture of their unit and the wider campus with respect to the CNI
- Outreach and engagement activities that have or have not worked in implementing CNI or similar efforts
- Perceived role that UCOP should play in helping implement the CNI
- Perceptions of work being done by other campuses on similar efforts

Each major theme is described below, with sample quotes.

Perceived Barriers to Implementing the CNI

During the interview, we asked whether respondents thought there were any barriers to implementing the CNI. Respondents typically had no trouble coming up with barriers and spoke on a wide range of topics, including ineffective organizational structures, lack of leadership, and poor communication between departments. While respondents spoke at length about these, the most commonly referenced barriers were competing priorities, cogeneration plants, insufficient finances, and communication and organizational culture challenges.

Competing Priorities

Competing priorities (or competing campus missions or initiatives) were a prominent barrier because respondents felt as if they needed to make difficult decisions about how to allocate limited financial resources and staff time. The CNI seemed to be a lower priority than other more immediate priorities, which ended up hindering any meaningful progress toward carbon neutrality.

> *"Carbon neutrality is just one of many, many very critical issues happening right now. Unfortunately, even though climate change and sustainability can relate to everything, if you're going to have a choice between talking about sexual assault or carbon neutrality, you're absolutely going to talk about sexual assault first."*

> *"For me, I look at this and I say, well it's a great goal and it was a great goal as it used to be stated, which was let's hit these milestones along the way and let's get there, but now I think that for the university to get there in the time frame they want with the financing*

* A 2016 master's project that focused on CNI implementation at UCSB included interviews in with key members of UCSB facilities and sustainability staffs. To avoid overburdening these individuals, we did not conduct follow up interviews with them. Instead, we cite results from the UCSB study that correspond to our own work.

> *that's available, then we need to shelve plans to grow the campus. We need to shelve plans to hire new faculty and staff. We maybe need to reduce the number of students that we're willing to educate. These are the other things you'd have to trade off, right?"*

Many respondents reported personally wanting to implement more sustainable practices such as working to achieve carbon neutrality—yet their units were forced to prioritize other goals, since they were not adequately incentivized or resourced to pursue the CNI. Respondents named four major competing priorities: health, campus growth, research, and teaching.

- Health was a concern for all campuses with medical facilities (UCD, UCSD, UCSF), where the top priority is enhancing patient care. Because of this, respondents at these campuses often remarked that it is not part of the medical leaders' jobs to consider sustainability measures, severely limiting action to implement the CNI. This was a common theme throughout conversations, where many decision makers on campus were not held accountable for sustainability progress. Furthermore, some medical centers are physically distant from their home UC campus, making it difficult for them to adhere to the procedures as compared to the rest of the campus.

  > *" I think that there's opportunity in sort of working carbon neutrality into the mission ,,, for med centers... I don't have it off the top of my head but it's something like part of the mission is to create a healthier world. … I think there's a very legitimate justification for doing the right thing environmentally as a medical center because in a sense it's like preventative health care, just really early on."*

- Growth was a barrier for a majority of campuses, despite the fact they had very different growth capacities. Most respondents also felt that the type of growth would differentially impact their ability to reach carbon neutrality, as some types of growth were more carbon intensive than others. For instance, growth in the student body versus medical facilities have very different energy needs.

- Research was discussed in several contexts across campuses, though most frequently as it relates to getting faculty and lab managers on board with carbon neutrality goals. Several respondents have observed unwillingness and hostility towards the CNI because faculty and lab managers are concerned they will compromise their research. For example, things like installing more energy efficient equipment or more careful monitoring of lab energy usage are often perceived as hindering their work. It is not that respondents noticed an intrinsic hostility towards sustainability, but rather that they view the integrity of their research as much more important. This was particularly apparent at UCD, UCI, UCLA, and UCSF.

  > *"Yeah, so it's like, are we gonna fix roofs and stop it destroying people's research and raining in their buildings, or are we gonna buy more expensive utilities? I'll go whatever direction you want, but to me you should probably stop the leaks."*

  > *"At the end of the day, lab occupants don't change the dilution ventilation rates of their laboratories. Lab occupants don't change the required ventilation, required velocity of air coming out of the exhaust ducts of laboratories so that you don't have re-entrainment or contamination of a neighboring roof. So there's, kind of like, fixed lab stuff. It's a lab, it's going to be energy intensive… Because again, at the end of the day, the guy or girl that's working in the laboratory is there to achieve whatever their research is, and they're going to do that because that's what they're paid to do."*

- Teaching was often referenced alongside research as the main mission of the UC system, and therefore something that must take priority. At the same time, while it is a barrier because teaching is more of a priority than the CNI, many felt that it can serve as an opportunity to help faculty engage with students. Because students tend to interact and trust faculty more than campus administration, classroom teaching is a sphere of influence that faculty can leverage well, if they feel inclined to. This was particularly relevant at UCD, UCI, UCM, UCSC, and UCSF.

Cogeneration Plants

Cogeneration was identified as a major challenge for every campus that had a cogeneration plant. It is such an obvious barrier that even campuses without them would reference co-gen on their sister campuses, expressing doubt that they would be able to achieve carbon neutrality with them. The issues with the cogeneration plants, beyond their carbon intensity, is that they are relatively new, fully functional, and often not paid-off. No obvious solutions were offered to address this, beyond resignation to buy offsets to compensate for their use.

> *"Oh, yeah, six out of 10 locations have cogen. Yep, that's gonna be a problem. Now let's now talk about replacing eight dozen lamps. Yes. Come on."*

> *"…but the fact that that [cogen] doesn't really seem to get recognized is an impediment to reasonably achieving carbon neutrality by 2025. It's very discouraging, because there should've been a chapter in this recent report about that. Literally, I did a keyword search as soon as I got it, and I just put in cogen, and it turned up once. And there was two or three lines associated with it in a paragraph, and that was all."*

Insufficient Finances

Because many initiatives that would help make progress towards carbon neutrality can be very costly upfront, a lack of available funding makes it difficult to get anything off the ground. Respondents observed that the lack of funding causes an additional problem: by having leadership fail to allocate funding to CNI, they are inadvertently communicating to the broader campus that CNI is not a priority. If stakeholders do not see campus leadership making it a priority, they are less inclined to do the same.

Other campuses are already at debt capacity (UCB, UCSC, UCSD), which means they are already paying off other energy intensive technologies, which makes it difficult to invest in carbon neutrality upgrades. Furthermore, other campuses that are experiencing a budget crisis report issues beyond just lack of money—they have lost staff. And even if they get new staff, they feel behind in getting initiatives off the ground, since they have to start from scratch.

> *"I mean, it's just absolutely plain and simple to me. It's money. You want to be carbon neutral? Fantastic, we're gonna be carbon neutral tomorrow. Bring huge piles of cash."*

> *"I have to maintain safe and efficient operations. I have a certain budget. In our annual budget, there's no line item says 'sustainability'."*

> *"Yeah, it's real easy for everybody to go green when it makes financial sense. And in reality it does, but no one looks at it that way."*

Communication and Organizational Culture Challenges

Problems with communication span many of the barriers discussed so far. Many respondents expressed the belief that competition among competing priorities is exacerbated because the CNI is not being effectively communicated. For example, many respondents expressed the need for help with communication and engagement to help get lab managers and faculty on board with the CNI. There are several reasons communication is perceived as a barrier. First, because carbon neutrality, in theory, involves the entire campus, there are innumerable audiences that must be engaged, requiring a diverse internal communication strategy. Exacerbating this issue is the fact that many sustainability departments lack personnel to specialize in communication in light of all their other responsibilities.

These communication issues are closely linked to barriers regarding organizational culture and structure. Respondents commented how the way that many campus departments are currently run is not conducive to long-term sustainability. For example, planning departments that are responsible for making decisions on new buildings, are not typically involved with ongoing maintenance of these buildings after construction. As a result, they are not incentivized to consider long-term maintenance cost savings from energy efficient

lighting and often opt for the cheapest (and therefore rarely most sustainable) option, even if the sustainable option would ultimately be cheaper.

> *"Our campus is getting to a stage now that we really need to formalize things more, but some people are still so rooted in that pioneer aspect, that it's difficult for some people to let go of that approach."*

Concluding Thoughts on Barriers

Several interesting insights emerged from the barriers discussion, with regard to the different positions interviewees held. First, the sustainability staff in particular noted a lack of appreciation and acknowledgement of their efforts; whereas energy managers, facilities, or other units did not report feeling a lack of appreciation for their units. Cogeneration plants came up frequently for the facilities and planning units, but not the sustainability offices, and facilities and planning units were also most likely to be aware of the barriers the campus faced in reaching carbon neutrality. This suggests that most sustainability offices are not necessarily included in discussions of meaningful strategies to reach CNI—at least not the sustainability staff we spoke with.

Yet regardless of the position of our interviewees, the most commonly cited barriers reported include: outdated equipment and building, lack of communication, too few staff, lack of cooperation, lack of formal support, and not enough money to see their carbon neutrality initiatives through.

Perceived Opportunities for Implementing the CNI

Respondents were asked about opportunities for achieving carbon neutrality on their home campus, and; all respondents had at least one idea to better implement the CNI. Some respondents shared opportunities that they had already implemented, which are presented below. Some respondents also made distinctions between opportunities that were system-wide as opposed to campus-specific; all opportunities were considered overlooked. These opportunities fell into several categories: leadership, organizational structure and decision-making, financial, communication and engagement, and coordination. While most respondents did not identify offsets as the best opportunity, they did discuss their use, which is summarized here as well.

Implemented Solutions

Of the solutions that had already been implemented on campus, many respondents noted that having cross-functional teams and working groups was extremely beneficial. Creating spaces for ideas to be shared and giving people opportunities to make meaningful cross-campus partnerships allowed for a better dialogue and idea exchange. Respondents from campuses with this type of working group or teams noted that having connections between operations, academics, and research, which led to more successful project implementation.

Another notable solution that several respondents shared was having leadership training for faculty, staff, and students on how to be sustainability leaders on their respective campuses. The training not only helped build skills, but it also helped create a community where people can work together or separately on shared goals. This type of training was also noted to be beneficial for students participating in hands-on LEED lab classes, which provide a clear connection between the CNI and the mission of the university.

Leadership Opportunities

The most frequently mentioned perceived opportunity (19 of the 30 respondents, representing all 9 campuses) was the need for increased support from leadership for carbon neutrality. Leadership support was noted as absolutely critical to the success of the initiative, and specifically their chancellor's support. While respondents spoke to the need for grassroots support and mid-level management buy-in, leadership and chancellor support was perceived as the most important. Respondents perceived that chancellors needed to publicly support carbon neutrality and encourage other campus leadership to prioritize it. Mid-level management in energy, sustainability, and planning are unable to pursue the initiative from their

respective positions without leadership buy-in and support. Leadership support is not only helpful for the staff who are in charge of pushing projects related to carbon neutrality, but for rallying support from other stakeholders on campus.

> *"If a campus did not have a chancellor who valued sustainability in general and carbon neutrality in particular, it is not going to happen...I cannot imagine being able to do my job, I cannot imagine being able to achieve the targets that OP has set for us, without a chancellor who is invested and takes it seriously."*

> *"We talk about this all the time in our department, we need leadership support. Without leadership support you're going to fail."*

> *"I think it's incredibly important. Let me be even more bold. If a campus did not have a Chancellor who valued sustainability in general and carbon neutrality in particular, it is not going to happen."*

Organizational Structure and Decision-Making Opportunities

After increased support from leadership, the next most popular opportunity for campuses was to change the way long-term planning decisions are made, such that carbon emissions can be built into the decision-making process. This would be achieved through better coordination and collaboration among units, and forums for more transparent discussions around campus priorities. Respondents felt it was important to foster cross-campus collaboration and clear communication about priorities and needs of the campus, so as to help make difficult decisions that weigh carbon neutrality and other priorities. For instance, several respondents spoke of a rift between those who plan new buildings, those who operate and maintain buildings, and those in sustainability offices working on carbon neutrality. Most suggested bringing sustainability officers, and other relevant units, together to share insights and resources.

Respondents also spoke to the importance of considering life cycle analysis in planning and decision-making. Specifically, with new buildings, the long-term cost of maintenance and operation should be considered, as well as possible savings accrued if energy efficient technologies are implemented. Life cycle analysis allows for flexibility when making decisions and for the campus to capture long-term savings.

Financial Opportunities

Perceived financial opportunities included loans specific to energy efficiency, engaging in public-private partnerships, and searching for other creative funding opportunities. Respondents from six campuses mentioned public-private partnerships being a beneficial avenue for campus projects. Most frequently, respondents spoke to power purchase agreements (PPAs) for implementing solar photovoltaic. However, other partnerships mentioned were with developers and private companies for building renovations and construction or with the local community for biogas or energy development. Unique funding opportunities mentioned included reaching out and appealing to donors, setting up a revolving fund to capture energy efficiency savings, and implementing a carbon tax.

Communication and Engagement Opportunities

Nearly half of interviewees stated that they believed facilitating communication and engagement around the initiative was a key opportunity. Respondents often referred to faculty and students as key audiences who needed to be more engaged. For faculty and researchers, better communication and engagement around building use was noted as imperative to facilitate a positive relationship with operations staff. Through better engaging building occupants, tension around building renovations may also be alleviated, while education around building features could facilitate behaviors that support carbon neutrality. Additionally, respondents spoke to the need to actively engage students with the decision-making process.

> *"Students have a lot of knowledge and expertise on this. If they can bring that to bear in a functional way, then they're powerful….but, they don't understand the context of why decisions are being made. Those two sides don't listen to each other."*

Coordination: Connecting with Other Campus Initiatives or Priorities

Ten respondents spoke to the importance of connecting the initiative to the campus mission of teaching and research, or the a medical center mission of patient care. This was particularly relevant for the teaching mission, as they noted that experiential learning has proven to be successful, specifically with regards to LEED lab classes for undergraduate and graduate students. For instance, the Bren School for Environmental Science and Management at UC Santa Barbara received its third LEED platinum certification with help from students in the LEED lab course. Respondents also referenced other campus initiatives, such as the Global Food Initiative or UCs water goals.

Offsets

Respondents from 8 out of 10 campuses spoke to the use of offsets for ensuring carbon neutrality, though noted that offsets were not the best solution for carbon neutrality. They acknowledged that offsets were often the most inexpensive solution for reducing emissions, but they were not the best long-term investment for their campus. Most would rather spend money investing in campus infrastructure, such as energy efficiency projects, so they could receive long-term savings rather than having to spend money each year on offsets.

If offsets need to be purchased, respondents noted that they would need to be chosen with the university mission of teaching and research in mind. Also, even if the offsets were more expensive, it would be better to spend more money to make sure that the purchase of offsets is in line with the values of the community and campus. Furthermore, to satisfy students and California taxpayers, the offsets should be purchased locally, or at least from California.

> *"[I'm] skeptical about offsets unless it's offsets tied to the campus's core mission through supporting student experiential learning and somehow supporting the students."*

> *"I am not a friend of offsets, by the way. I realize it's like, I know the big picture if we buy offsets from Louisiana, it's okay, but in my mind, if I find something that it's even a little bit more expensive here, in California, because when you buy offsets, you are actually investing in somebody's infrastructure."*

> *"Can we do either UC- or even campus-level developed offsets? Take the money that we would spend on buying market offsets, but use it for either putting it back into energy efficiency or renewable energy projects? On-campus energy efficiency, or renewable energy, or something like that. We are a public institution. This would help the taxpayers. It would help the students. Rather than just going out and spending money on the market. That's what I would like."*

Concluding Thoughts on Opportunities

Throughout the administrative interviews it became clear that respondents were highly aware of the technical solutions for their respective campuses that would move them towards carbon neutrality. However, while the technical solutions were obvious, the true challenge was implementing them given the current campus culture and organizational structure. The most cited opportunities regarded increased campus leadership, increased collaboration, changing the way decisions were made to include all parties and life cycle analysis, and increasingly engaging faculty and students. While offsets were noted as a potential opportunity, respondents saw offsets as a last resort and would much rather spend money on campus infrastructure.

Reflections on Organizational Structure and Culture

Respondents noted the importance of organizational structure in whether or not carbon neutrality projects could be implemented, as well as a supportive culture for carbon neutrality. Generally speaking, campus departments or units reported that they collaborated well with other units when they were able to. However, energy managers and sustainability officers generally did not report always working

collaboratively, rather they felt they were working on separate (but related) projects. Furthermore, they felt that regardless of the organizational structure, it was most effective when the "right people" or "right leadership" were present, while meetings or projects felt ineffective without those key players. In fact, most noted, good collaboration simply required meeting with the right people and keeping the right people—those who have decision-making abilities or can set priorities—up to date.

The offices also reported a variety of different organizational structures for their sustainability and management offices. For instance, some sustainability offices had a "distributed" model, in which sustainability staff were placed in different units or departments throughout the campus, while others had more of a central office that didn't quite interface as much with the other offices or units. While it is difficult to compare effectiveness based upon these interviews, it did seem as if those units that were more integrated across campus felt as if they were both better informed of relevant energy projects, or that they were better able to implement their projects.

Regarding campus culture, those respondents whose campuses had something akin to a "war room" feel—a group of people with a shared goal that they actively pursued—appeared to feel effective at their work. It seemed as if this was also helpful in integrating various units, even if those units were not officially linked via a more "distributed" arrangement.

> *"I've said before and I'll say it again, I think sustainability is kind of in the DNA of this campus. And we've been working on and researching and teaching about and taking action on sustainability issues for decades. Really in many ways since our founding. And I believe that that has led to a culture along with the abiding respect for collaboration and interdisciplinary work on this campus that I think is pretty unique."*

> *"That means that sustainability has a seat at the table when we're doing planning for buildings. That means that carbon neutrality has a seat at the table when we're planning for buildings. I want to underline that, because to me that's a very important thing. I've been at other campuses where that is not the case, where sustainability is kind of an outlier. It's outside the organization. It can be any number of different places."*

> *"I think it takes a sustainability program manager that isn't afraid to admit they know nothing and then seek that knowledge. They have to sort of be cool with spreadsheets and technical details and talking about HVAC and getting excited about lighting efficiency. I think that's been the most helpful way that we have been able to really convince leadership to put energy and time and resources into this."*

Outreach, Communication and Engagement

Respondents in the category of sustainability officers tended to have the most experience with outreach and communication, although those who didn't work with it directly still had opinions. Most reported that the best way to engage various audiences across the campus was to share information and data about campus energy use and campus emissions. For instance, at UCD, a thermostat program was put into place that asked people to share how warm or cold their workspaces were. This allowed those involved in the community to get a better sense of how more or less energy use "feels" in practice as well as see actual numbers based upon their actions (e.g. amount of energy saved through their choices).

Additionally, larger campaigns that provided a bigger vision and means of engagement, such as the Cool Campus Challenge, were easier to implement and involve students. Many sustainability officers found this to be a highly effective approach, and hoped that other campaigns like it would follow. Generally, respondents who thought that communication and outreach could be effective—or had potential—expressed the belief that it would be of benefit to implementing the CNI. For those who mentioned communication, they noted some approaches to reframe or "humanize" the discussion, either by including

more human impact stories or relating it to things that their audiences would care about, such as public health or social justice.

However good the outreach and communication, respondents noted that it still can fail when there are other competing priorities for their audience. Several respondents noted that lab managers are a particularly difficult audience to engage and to get on-board with the CNI. However, when lab managers are engaged, they can make some appreciable differences. Finally, regarding students, many respondents felt that outreach efforts had the potential to fail unless the UC commits to some form of divestment or at least addresses it, since it was of importance to a large portion of the student body across the UC. Students also feel they need to have ownership of an issue to get behind it, several respondent noted.

> *"… I think that we will keep missing the mark unless we humanize the conversation."*

> *"What you're going to hear from the students is they're really never going to fully buy into this unless the UC commits to divestment."*

> *"Students can have a tendency like if they weren't the ones who created it or they weren't the ones who came up with it, they won't as easily engage."*

> *"… I would say a substantial majority are personally supportive and personally invested in it, even to the point that when we have invasive actions or programs, or renovations, or policies that impact them, if we clearly explain it, if we're transparent and we get the message there, so they know what the heck is going on and they understand, 'Oh, my lab is being torn apart because we have to install new VAV boxes in the HVAC system, and that's going to reduce our energy consumption which is going to move us closer to carbon neutrality... Oh, now I understand why I have to put up with two weeks of disruptions. Okay, let's do it.' That's different than when the facility person just walks in and says, 'Okay, we're shutting you down for two weeks, have a nice day,' and doesn't explain why. We go out of our way to try to explain why. We tell them why we're doing things and what the value of it is, and what the connection is between the action and the program, and the policy to the target that we're trying to achieve. As long as we do that, the vast majority are very supportive."*

Perceived Role of UCOP

We asked respondents to share their thoughts on the role of UCOP in helping to achieve carbon neutrality goals for the campuses. Respondents spoke to both the current role that UCOP is playing and potential opportunities for UCOP to better facilitate campuses with the initiative. It was noted that the best role UCOP could play would be through coordination efforts.

Currently, UCOP is perceived as doing a good job coordinating campuses that are facing similar problems. Respondents from several campuses noted that UCOP has been very supportive of energy managers and has facilitated the sharing of data and best practices. Respondents also noted that UCOP has led the way with coordinating the procurement of biogas and green electricity, and developing guidelines for the purchase of offsets. Energy managers from two campuses spoke to beneficial partnerships coordinated and managed by UCOP that provided funds for energy efficiency projects, such as the Statewide Energy Partnership (SEP) and that this was an activity that was needed going forward.

While UCOP is perceived as having helped the campuses so far, every respondent noted at least one way that UCOP could additionally help campuses reach carbon neutrality goals. Respondents noted that campuses need more help with outreach and engaging campus stakeholders. They spoke to a lack of resources to effectively engage new students each year and support current student leaders with their efforts. One suggestion was that UCOP could create toolkits that could be tailored and used by campuses for engaging students, staff, and faculty. Another suggestion was to have UCOP staff members rotate

among campuses to help with communication and engagement. Respondents also noted that it would be nice to have more transparency with regards to what is going on at other campuses with students, staff, and faculty. Finally, numerous respondents mentioned the Cool Campus Challenge and noted its effectiveness and the desire to do another.

Another role UCOP could play is to develop stronger support for the initiative among campus leadership. Respondents spoke of the need for the initiative to start with university chancellors. One suggestion was to have chancellor's report to UCOP monthly on carbon neutrality progress as a way to increase accountability. Campuses were not built for carbon neutrality; thus campuses need significant support from leadership in order to update practices, policies, and long-term planning in order to become carbon neutral.

Most respondents noted that, ultimately, individual campuses will need to forge their own path to neutrality, but there are certain system-wide efforts that UCOP could help coordinate.

Providing green electricity is one example of a coordination effort that UCOP could take on. Other suggestions included negotiating biogas contracts and procurement of LEDs, coordinating large infrastructure projects, developing utility relationships, and facilitating long-term financing for energy efficiency projects. Overall, campus respondents were cognizant of the responsibility of the individual campuses to move towards carbon neutrality, but they spoke of UCOP playing a more prominent role coordinating between campuses and advocating for system-wide improvements.

> *"When the UC needed the utilities to play fairer with them as far as energy efficiency incentives and rebates and programs and building codes. That's a great role for UCOP...I think they're better at coordinating more than leading."*

> *"So I think it's incumbent on the campuses to work at the local level, and then help foster the partnership between the local community and OP. Then OP can help a lot at the state level, and help find opportunities for the campuses."*

> *"I don't think anyone is thinking that the system will save us. I think everyone is thinking we have to do it on our own, each individual campus needs to do it. I think if people start to think someone else will take care of it for us that the urgency disappears. However, at the end of the day, we're relying on UCOP wholesale energy to be 100% renewable by 2025."*

Perceptions of Work Being Done by Other Campuses

Without prompting, many respondents offered their perceptions of the work toward carbon neutrality that is being done on other campuses. For instance, several campuses were called out as having better collaboration or more creative solutions for carbon neutrality, such as UCM's meter systems, UCI's investment in its people, and UCD's "war room." Also, campuses that had chancellor support were considered to be much better off. Non-UC campuses were also identified as doing much better than UC, such as Bunker Hill community college (re: creative space use), Arizona State University (innovative in general), CSU East Bay (unique partnerships), CSU generally (cap and trade, power purchase agreements), and Stanford (electrification).

> *"Every campus has a unique story. Every campus has a story that is that campus's story, and it has nuances and context and variations that are very different from every other campus. I encourage frameworks that are flexible, but it gives a common language. It gives the ability to speak that language exclusively about our campus. I think they've found that nice middle ground to allow that to happen."*

Figures

Darker shades indicate a greater emphasis placed on a particular barrier by a specific campus. The lightest shade denotes that a barrier was not emphasized at all by a campus.

Across the campuses, our interviewees placed more emphasis on organizational structure, budget and finance, and technical barriers, and less emphasis on organizational culture, mission and priorities (Figure 1). In general, the campuses on the left of Figure 1. UCSC, UCSF, UCLA, and UCD) tend to cluster around the same barriers. The campuses to the right (UCR, UCI, UCB, UCSD and UCM) exhibit more variation, with UCI, UCB, and UCSD showing some similarities to each other. Also of note was the fact that UCI reported the fewest barriers. Their facilities staff were the most likely to be aware of barriers and to discuss them, and cogeneration plants were not commonly expressed as a barrier by UCI facilities or planning.

There were also differences and similarities in perceived barriers according to the two primary divisions targeted by our interviews, sustainability and facilities or energy-management (Figure 2). Overall, members of units demonstrated similar perceived barriers across a number of domains, including organizational structure, budget and finance, and mission and priorities. Importantly, while Sustainability personnel emphasized cultural barriers, this was less the case for members of facilities and energy management. On average, both groups do not view technical barriers as primary to the challenge of CNI implementation.

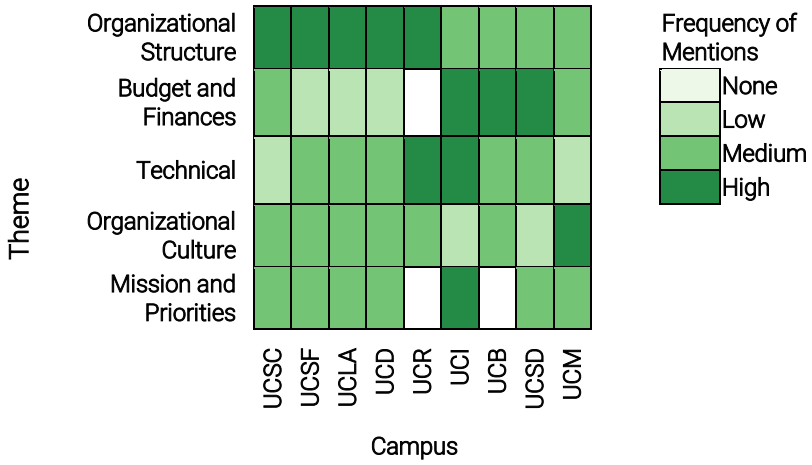

Figure 1. Administrative interviews result: Perceived barriers by campus

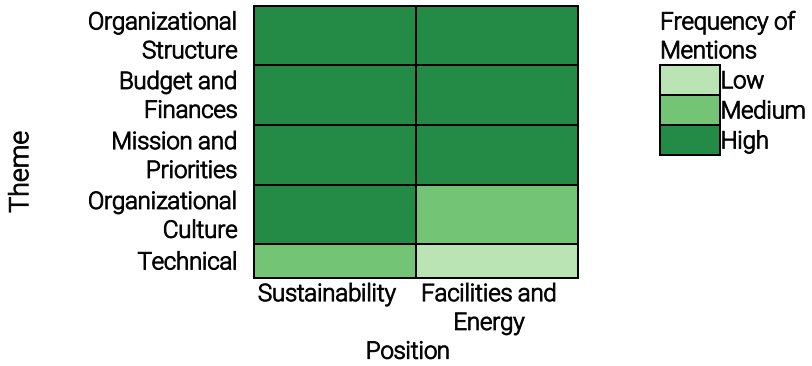

Figure 2. Administrative interviews result: Perceived barriers by position

Perceived Opportunities

We also compared similarities and differences in perceived opportunities by campus and position (Figure 3 and Figure 4). Structural and cultural opportunities were ranked highest, on average, by the nine campuses. The data also demonstrate fairly consistent mentions of technical opportunities. However, clear differences emerge in the other three opportunity categories. While UC Davis pointed to significant opportunities related to

budgetary or financial changes, UCLA and UCR did not cite these as perceived opportunities. UC-wide references opportunities that are not isolated to a campus, but occur across the system. These opportunities were viewed as particularly promising by UCB, UCI, UCD, and UCLA, but were not

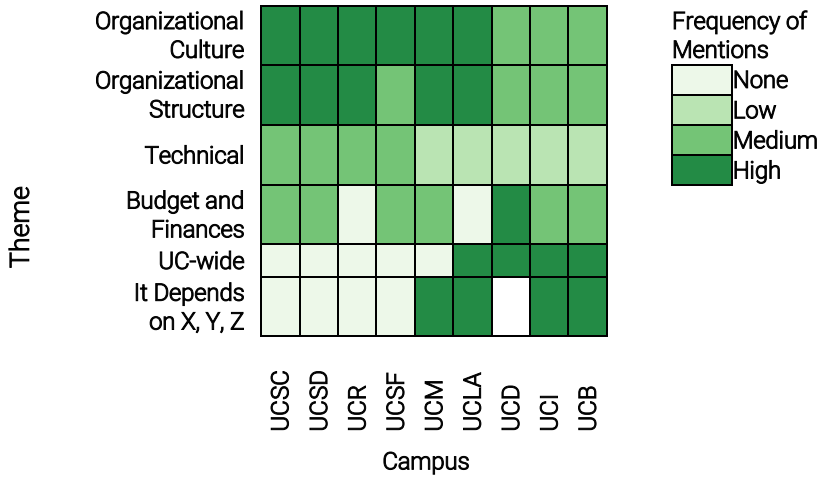

Figure 3. Administrative interviews result: Perceived opportunities by campus

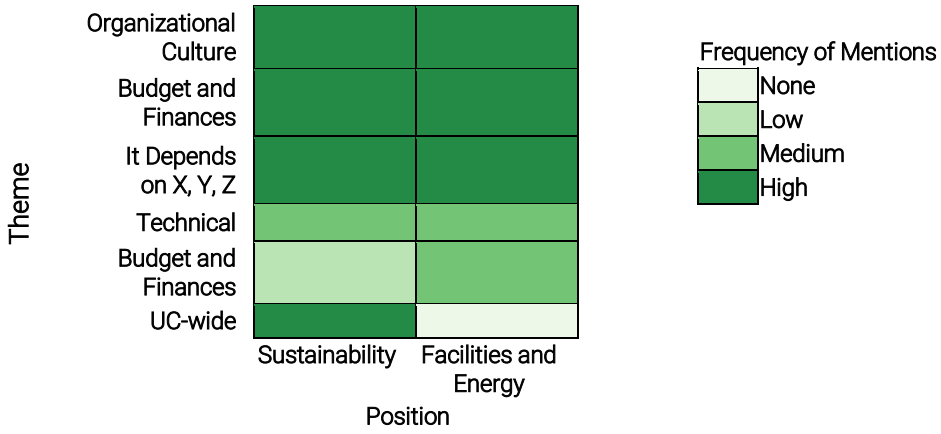

Figure 4. Administrative interviews result: Perceived opportunities by position

mentioned at all by the other five campuses. The final category, It Depends, refers to instances where interviewees denote that 'all of the above opportunities' depend on other changes. UCB, UCI, UCLA, and UCM all spoke to this caveat.

Regardless of position, interviewees pointed to cultural and structural opportunities , also denoting that opportunities will depend on other things (Figure 4). The most notable difference between sustainability personnel and facilities and energy personnel comes in reference to UC-wide opportunities, with sustainability personnel often mentioning this as an opportunity to reach carbon neutrality, something which is not noted by members of facilities and energy management.

The Role of UCOP

Similarities and differences by campus and position regarding the role UCOP should play are shown in Figure 5 and Figure 6. Campuses tend to differ on whether the most important role for UCOP is to help coordinate (UCSF, UCR, UCD, UCM, UCSC) or to provide financial support (UCSC, UCB, UCSD). They all point to some importance in UCOP providing leadership and authority on the issue.

Few differences between positions emerge regarding the role that UCOP should play. Both groups point to the importance of UCOP in helping coordinate campus efforts and providing financial support. Position

differences are evident for UCOP's role as a leader and authority. Those in sustainability positions noted leadership as an important UCOP role whereas members of facilities/energy did not.

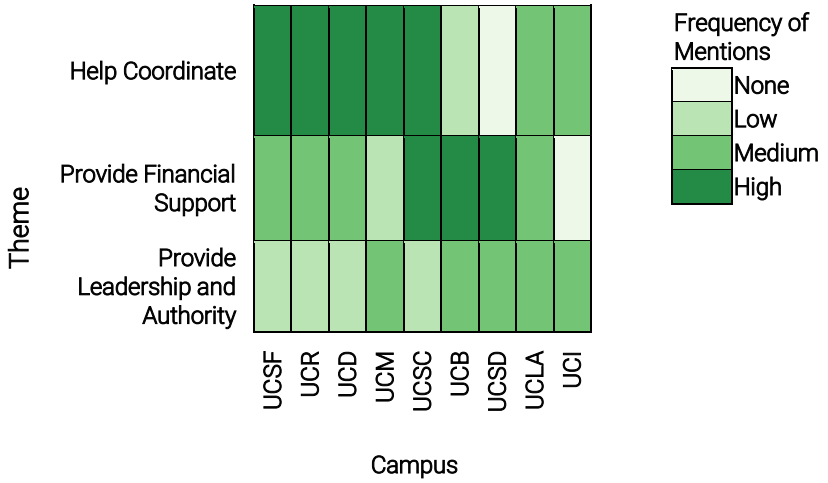

Figure 5. Administrative Interviews Result: Perceived Role UCOP Should Play, by campus

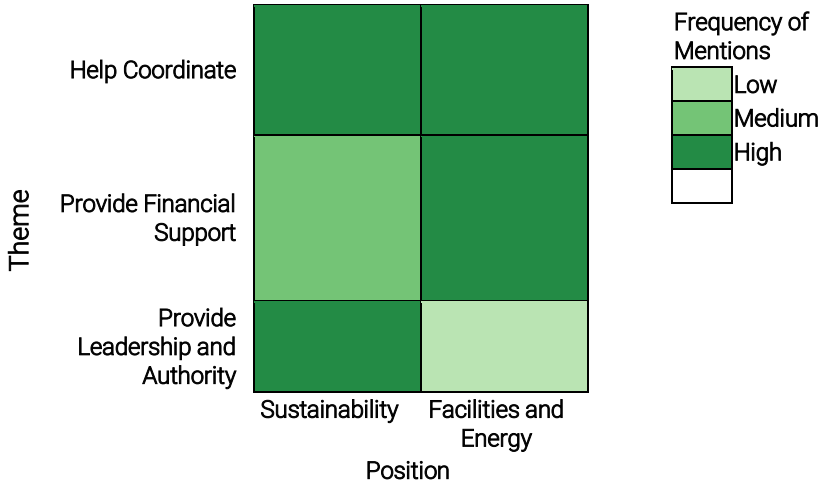

Figure 6. Administrative interviews result: Perceived role UCOP should play, by position

Administrative Interview Guide

The following is script was used in the interviews conducted for this research.

Introduction

Thank you so much for taking the time out of your busy schedule to meet with us. This shouldn't take more than 30 minutes.

Introduce Ourselves.

Remind them of the project we're working on.

As mentioned in our email, we are members of a working group evaluating CNI implementation across each of the UC campuses. The group is made up of faculty, researchers, and students from the UC.

We are contacting you to get an understanding of carbon neutrality efforts on your campus. Our hopes are that by talking with you and others we will have an understanding of the opportunities and barriers faced by each campus in reaching carbon neutrality.

We are also hoping that as a first contact you will be able to provide some feedback on who else on your campus we should follow up with.

Recording: *9 + 1 to confirm

It would be helpful if we could record this discussion, since it will be difficult to capture all the great insights you'll be sharing. The recording and notes will remain confidential, and your name will never be associated directly with your responses.

But if you are not comfortable with the recording, we also are able to take detailed notes instead. Which would you prefer?

START RECORDING/NOTES

A) Barriers & Opportunities
   1. Barriers: In your experience, what would you say are the biggest challenges or barriers to achieving carbon neutrality?
   2. Priorities: From your perspective, what other priorities compete most strongly with carbon neutrality?
      a. Should the CNI be a priority for your campus/UC? Why/why not?
   3. Opportunities: What do you think might be an overlooked opportunity for achieving carbon neutrality?

B) Structural Hierarchy & Policy Process
   We are also interested in how carbon neutrality policies and projects get enacted on your campus.

   4. Role: What is your role on campus? Your title is ____, but how would you describe what you do, most broadly? (e.g. energy manager, sustainability officer)
   5. Reporting Structure: Who do you report to, or who do you make recommendations to regarding CN?
   6. Connection to sustainability officers: What is your relationship with any sustainability officers on campus?
   7. Collaboration: What kinds of collaboration around carbon neutrality happen, both on campus of off-campus, if at all?

D) CN Strategy & Tradeoffs
   8. What do you believe to be the primary strategies for reaching the 2025 goal?
      a. What are the barriers and/or tradeoffs to achieving each of these?

9. What is your general sentiment toward the use of offsets? How about each of the following?
    - Energy efficiency
    - Biomethane
    - Renewables
    - Smart growth
    - Internal carbon tax

E) Culture of sustainability
We are also interested in general sentiment toward carbon neutrality within your campus unit.

10. Would you say that other groups on campus share the same attitude toward carbon neutrality? Do they share the same priorities?
    b. Does it vary across campus? Different campus units or groups? Why?

F) Communication & Outreach (for sustainability officers)

11. Have you done any communication campaigns around carbon neutrality? If so:
    a. What did they entail?
    b. Who did you target & why?
    c. How were these campaigns framed?
    d. Were you able to measure the impact of your communication campaigns? If so, what did you find?

G) Support & Responsibility
There are a variety of ways to enact carbon neutrality policy, and we are curious about what you think is the best strategy.

12. Is there anything UCOP could do to help you achieve your carbon neutrality goals?
13. Responsibility: Who do you think should take responsibility the most on this issue?

Closing

14. Is there anything else you would like to add?
15. Do you have any questions for us?

Thank you so much for your time. This has been incredibly helpful, and we have learned a lot.

Thank you again so much for your time. Please reach out to us if you have any questions. We're happy to share our final report with you.

STOP RECORDING

6.1.2. Faculty Survey

This appendix provides additional detail for the UC-TomKat Carbon-Neutrality Strategic Communication Working Group survey of the UC-faculty conducted in spring 2017. As suggested in the main text of this report, the goals of the survey were to solicit faculty input and help generate ideas around how to address sustainability issues. Because faculty are likely to be an important constituency in addressing climate change and carbon neutrality within the UC system moving forward, getting a baseline for tracking how faculty attitudes may change over time, and keeping them engaged in the CNI conversation, were equally important objectives for this survey.

Survey Procedure

We sought information across a broad range of topics—more than we could ask of a single faculty member in a short survey—that we divided into 10 blocks. To minimize the burden on individual respondents, each faculty participant was randomly assigned to complete 5 of the 10 blocks, plus the demographics information, creating an approximately 10-minute survey for most participants. To capture both baseline faculty attitudes and explore potential ways to think about these issues, eight of the blocks employed a "split-ballot" research design such that faculty were randomly assigned to a treatment or control condition. By contrasting the responses between the two forms we could test the efficacy of different ways to think about particular ideas (e.g., labeling a policy a "carbon tax" versus a "sustainability fund"). The remaining two blocks contained no intervention; all faculty members who received them saw identical items and prompts.

Faculty Representation

The survey was sent to faculty list-serves at all 10 UC campuses. The notion of "faculty" was conceptualized to incorporate all levels of ladder faculty, research scientists, post-doctoral fellows, professors of practice, and lecturers. The largest list-serve was estimated to reach more than 9,000 faculty members and the smallest estimated to reach almost 500. We estimate that the survey was sent to approximately 44,000 potential participants. There was no mechanism to verify if a potential participant received the email or if all addresses on the list were active, therefore this number may he inflated. By the survey deadline, 3,396 faculty members had participated in the study. Of those, 2,427 completed the survey. Thus, we estimate the participation rate at 5.46%. If, as noted above, our participation rate denominator (44,000) is inflated, this participation rate estimate may represent a lower threshold.. Our respondents were reasonably reflective of the faculty as a whole with respect to gender (43% female UC-wide vs. 48% in our sample) and disciplinary focus (except for medicine and health sciences: 31% UC-wide vs. 23% in our sample), but not race. The UC system has a lower proportion of White/European Americans than our sample (85% UC-wide vs. 77% in our sample). IN addition, faculty of Asian/Pacific Islander background were underrepresented in our sample (31% UC-wide vs. 5% in our sample).

Participants

In our sample, 1,213 participants identified as female, 1,102 as male (Table 1), and 30 as an identity other than these two genders. Both early career and senior faculty participated in our study (Figure 7). Politically, participants overwhelmingly leaned liberal (Figure 7). Specific information about the demographic make-up of our sample can be found in the tables and figures below (Tables 1-5).

Table 1. Faculty survey demographics: Gender

Gender	N	%
Female	1102	47.6
Male	1213	52.4

Table 2. Faculty survey demographics: Position

Position	N	%
Adjunct Faculty	85	2.5
Assistant Professor	260	7.7
Associate Professor	272	8
Clinical Faculty	57	1.7
Full Professor	865	25.5
Lecturer	186	5.5
Lecturer with Security of Employment	61	1.8
Other Position	272	8
Postdoc	126	3.7
Research Scientist	181	5.3

Table 3. Faculty survey demographics: Campus

Campus	N	%
Berkeley	422	12.4
Davis	384	11.3
Irvine	180	5.3
Merced	52	1.5
Riverside	213	6.3
UCLA	329	9.7
UCSB	225	6.6
UCSC	86	2.5
UCSD	207	6.1
UCSF	324	9.5

Table 4. Faculty survey demographics: Area of study

Area of Study	N	%
Arts & Humanities	339	10
Business & Management	51	1.5
Education	72	2.1
Engineering & Computer Science	208	6.1
Interdisciplinary	75	2.2
Law	32	0.9
Life Science	371	10.9
Math	42	1.2
Medicine & Health Science	541	15.9
Other Area	84	2.5
Physical Science	243	7.2
Social Science & Psychology	307	9

Table 5. Faculty survey demographics: Years at university

Years at University	N	%
Less than 1	167	4.9
1 - 5	483	14.2
6 - 10	400	11.8
11 - 15	328	9.7
16 - 20	271	8
21 - 25	201	5.9
26 - 30	177	5.2
31 - 35	129	3.8
36 - 40	87	2.6
41 - 45	48	1.4
46 - 50	30	0.9
50+	25	0.7

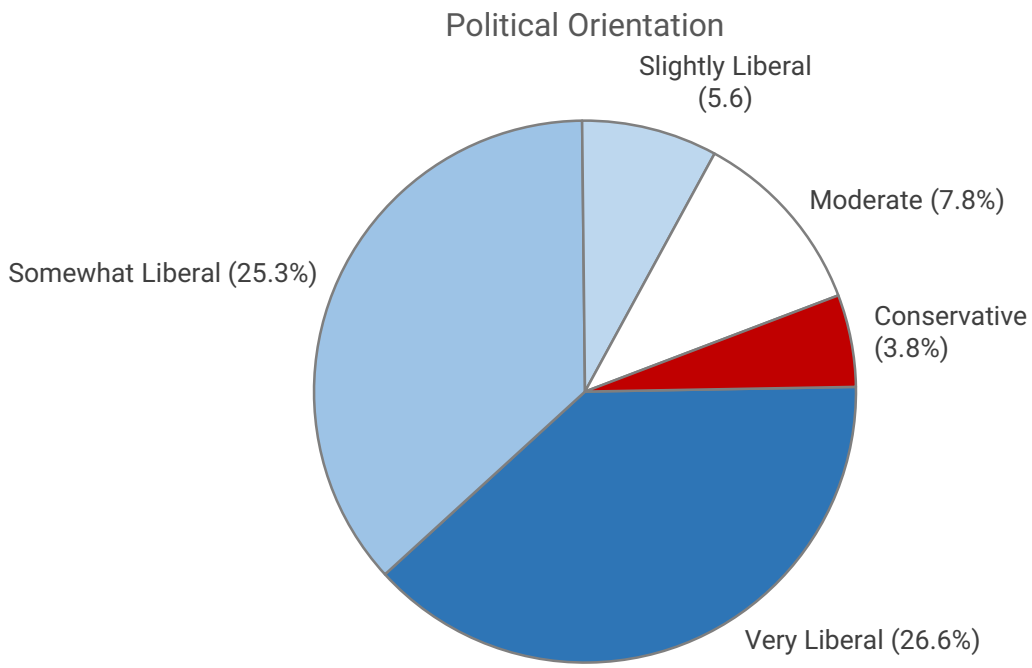

Figure 7. Faculty survey results: Political orientation. Approximately 30% of respondents chose not to answer this question and are omitted from this chart. Therefore, percentages do not total 100.[*]

Results

Through this project, we hoped to explore two main questions; 1) how do faculty members feel about the UC system's pledge to achieve carbon neutrality by 2025 and about issues of environmental sustainability in general, and 2) to what degree might faculty members support the goals of the carbon neutrality initiative when certain tradeoffs are made salient?

To make items and scales as interpretable as possible, as possible, we mathematically transformed any data that was not inherently meaningful (e.g. items that had 5- or 7- point response options) to array on a 0 to 1 scale. This was done during our analysis to prevent having to mentally recalibrate between 5- and 7-point responses when evaluating the results. Where the underlying metric for a question was meaningful, we left the responses in those units. For example, one item asked respondents to rank 4 items in order of importance, so these items are left as mean rankings (ranging from 1 = most important to 4 = least important). Another item asked how about future budget allocations relative to the current budget allocation (ranging from 0% of the current budget to 200%). Graphical depictions of mean scores on the various measures broken down by gender, campus, area of study, faculty position, and years at the university are presented at the end of this appendix.

Initial Attitudes and Behaviors

To assess participants' overall initial orientation towards environmentalism, we employed two scales developed by the researchers. The first scale assessed attitudes towards environmental protection (8 items; mean =.83 on a scale where 0 = not at all important and 1 = extremely important .) (Figure 8). The

[*] Includes all respondents who selected Slightly Conservative, Somewhat Conservative, and Very Conservative.

mean item scores ranged between 0.57 for the item "*when you make purchases for your job, how important are environmental considerations in the purchasing decisions*" to 0.91 for the item "*to what extent do you favor or oppose government regulations as a way to protect natural habitats*".

The second scale assessed current reported behaviors related to environmental protection (4 items; mean =.58 on a scale where 0 = almost never and 5 = almost all the time.) (Figure 9). The mean score of each item ranged from 0.42 for the item "*how much effort do you put into persuading colleagues to adopt environmentally-friendly practices*" to 0.83 for the item "*how often do you attempt to conserve water while you are on campus*". Tables at the end of the appendix show the complete scales with their items and response options.

Further exploration into faculty attitudes and behaviors showed that, on average, female faculty members in the study had more positive environmental attitudes (mean =.85) than males (mean =.81) , a statistically significant difference; t (1143) = 5.17, p <.001. Female faculty members also reported engaging in more environmentally protective behaviors (mean =.61) than their male counterparts (mean =.56); t(1143) = 4.48, p <.001 (Figure 25).

Overall, environmental attitudes seemed positive among faculty at all the UC campuses relative to the nature of the questions on the scale, with the lowest mean score from faculty participants at UCSB (mean =.82) and the highest mean score from faculty participants at UC Merced (mean =.87). For behaviors, scores ranged from faculty participants at UCLA (mean =.53) and the highest from faculty participants at UC Riverside (mean =.63). Perhaps more striking—as these narrow ranges suggest—was the consistency in environmental attitudes and behaviors between the campuses (Figure 21).

It is important to gauge the positivity of faculty environmental attitudes and behaviors in the context of the specific questions asked. (Figure 8 and Figure 9) Nevertheless, the scales may provide a useful starting point for the working group as they attempt to achieve the goals of the Carbon Neutrality Initiative.

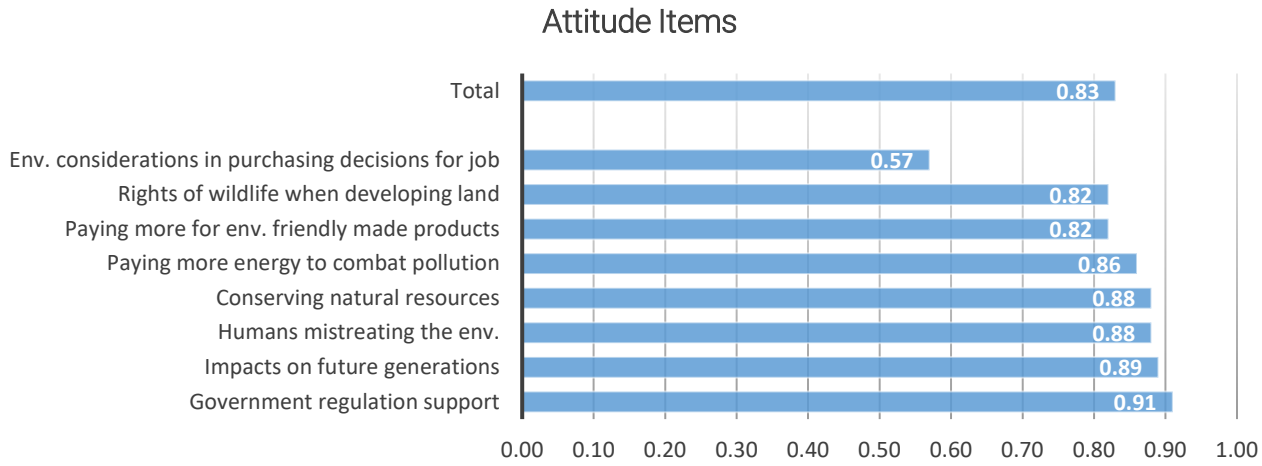

Figure 8. Faculty survey results: Attitude items, level of importance (0 = not at all important; 1 = extremely important)

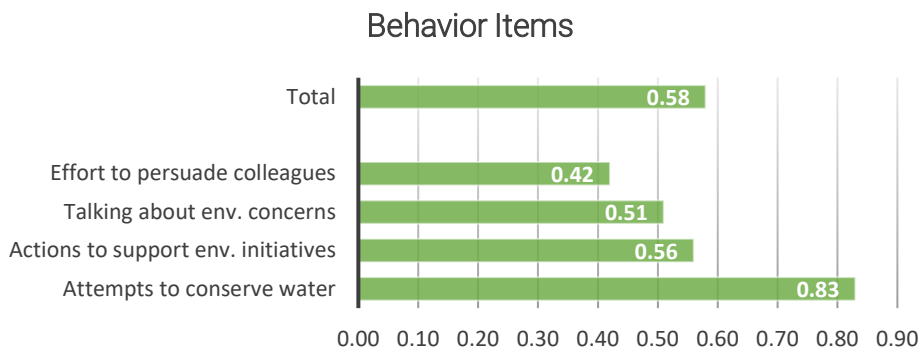

Figure 9. Faculty survey results: Behavior items (0 = almost never; 1 = almost all the time)

Climate Change Problems

Because climate change has become so politicized nationally, we felt it important to understand faculty members' initial perceptions of the problem climate change poses. Scores on our scale for assessing climate change problems (6 items; mean =.82), ranged from 0.75 for the item "for your university, how severe or mild do you think the effects of climate change will be?" from extremely mild to extremely severe, to 0.90 for the item "How much do you think global warming will harm people in the United States?" from not at all to a great deal. (Table 8. Faculty survey results: Climate change problems items (Table 8 and Figure 26).

Three of the items for perceptions of the problem climate change poses were adapted from the Yale Program on Climate Change's 2016 survey on climate change in the American mind[1]. Comparisons of our sample responses to the parallel items given to a representative sample of the American public are shown in Figure 10, Figure 11, and Figure 12 below.

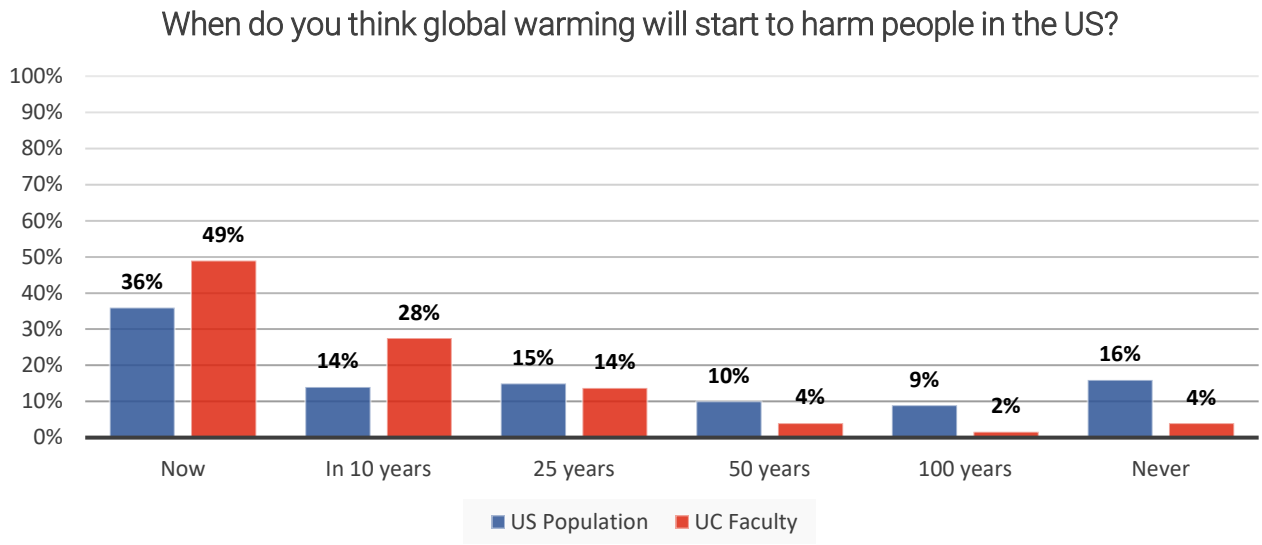

Figure 10. Faculty survey results: When do you think global warming will start to harm people in the U.S.

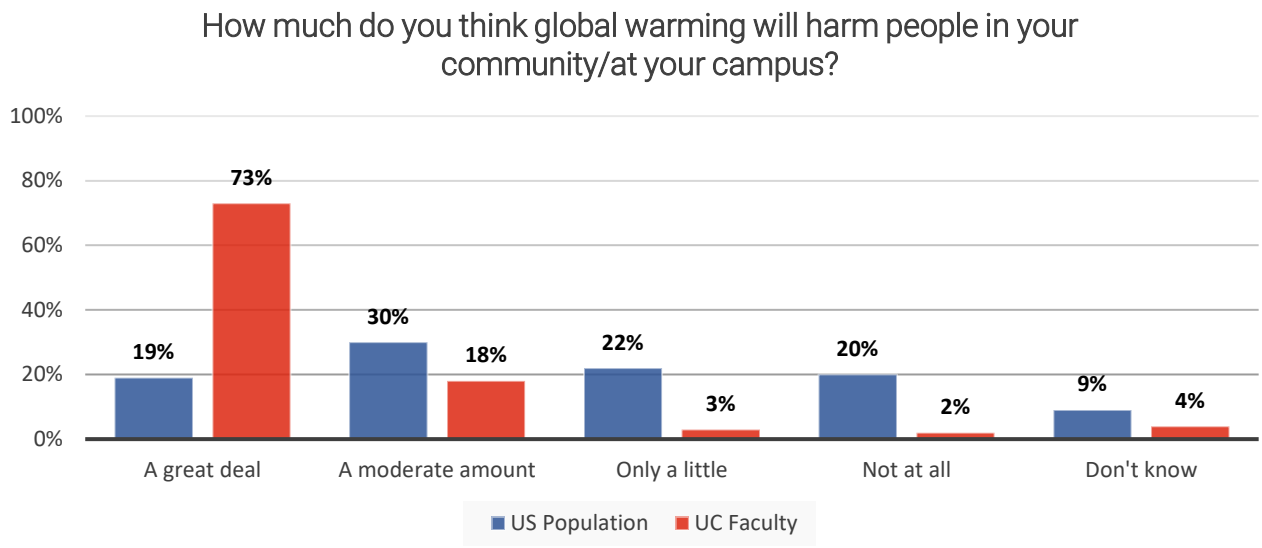

Figure 11. Faculty survey results: How much do you think global warming will harm people in your community/at your campus?

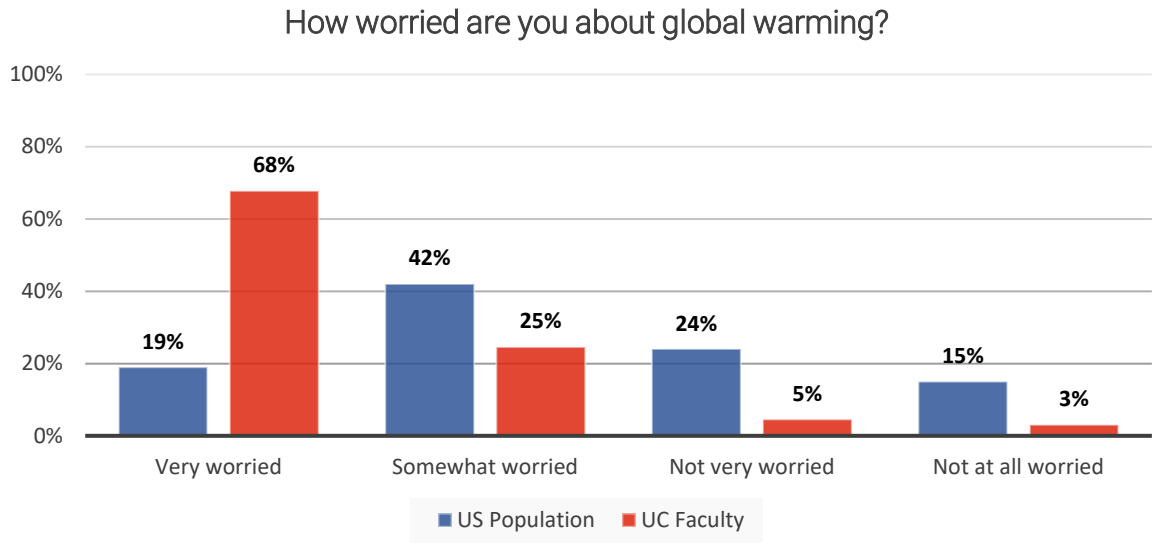

Figure 12. Faculty survey results: How worried are you about global warming?

Collective Efficacy

Having gathered information about faculty attitudes towards environmental protection and the problem of climate change, we next sought to understand their perceptions of the University of California's ability to combat climate change. In other words, our *collective efficacy* questions assessed how much progress respondents believed their community (the members of the UC System) could actually make in addressing climate change.

Items on the collective efficacy scale (5 items; mean =.52) ranged from.49 for "*How confident are you that UC Office of the President will do their fair share to achieve the goal of carbon neutrality by 2025"* to.58 for

How optimistic or pessimistic are you that the campus operations across the UC-system can become carbon neutral by 2025" (Table 9 and Figure 32).

Female faculty members reported slightly more collective efficacy (mean =.53) than males (mean =.51), $t(1086) = -2.12$, $p = .034$). Aside from this small difference, feelings of collective efficacy seem quite consistent across UC subgroups of interest (Figure 37).

Perception of Roadblocks

In surveying participants about perceived "roadblocks" to achieving the goals of the Carbon Neutrality Initiative, respondents rated six potential barriers to the UC-system attempting to become carbon neutral by 2025 in terms of how problematic they anticipated each one might be (mean = 0.50). On average, the roadblock that respondents perceived as the least problematic was that "the problem is too large to surmount" (mean = 0.44), while the roadblock that respondents perceived as the most problematic was "the lack of funding for the initiative" (mean = 0.73). Overall, the mean score among faculty participants who received the block was 0.50 for all six roadblocks together. (Figure 13)

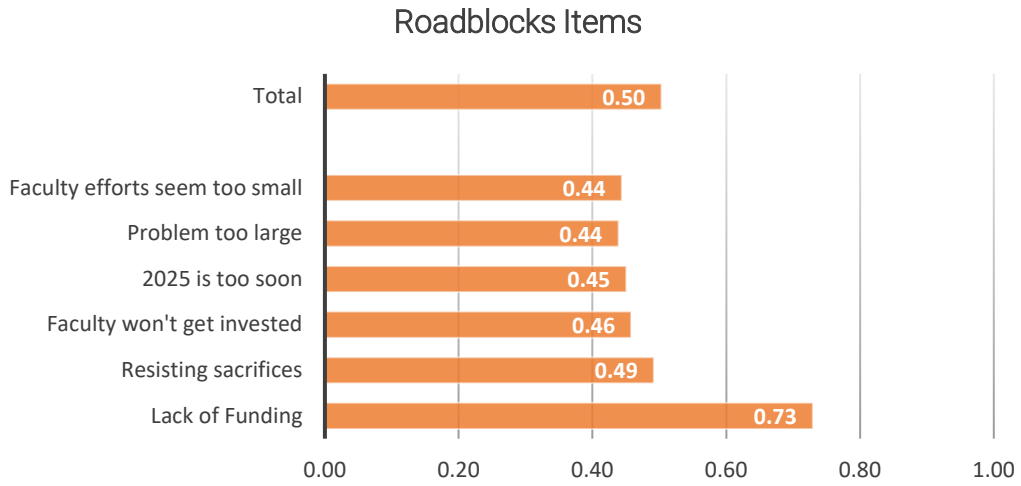

Figure 13. Faculty survey results: Roadblock items

Support of New Policies

Participants were presented with six potential new energy policies and were asked to what degree they would support or oppose the adoption of each approach on their campus (mean = 0.77). On average, the policy that respondents supported the least was "PURCHASE RENEWABLE ENERGY: Your campus pays a premium to purchase renewable electricity from the utility grid" (mean = 0.70), while the one they supported most was to "INVEST IN ENERGY EFFICIENCY: By increasing the energy efficiency of existing buildings your campus would use the saved costs to fund other renewable energy programs" (mean = 0.92) (Figure 14).

Overall, faculty participants generally favored the proposed policy approaches. As depicted in the figure below, no approaches were opposed—a 0.5 rating equates to "neither favor nor oppose." Four of the 6 responses received ratings of "moderately favor" or higher.

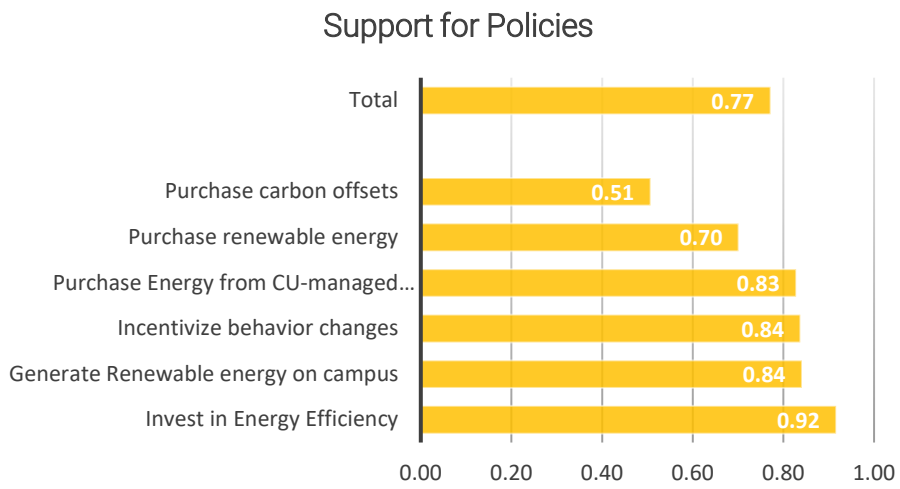

Figure 14. Faculty survey results: Support for policies

Support of Budget Allocations

Given the important role of financing in the Carbon Neutrality Initiative, we assessed participants' preferred budget allocations for sustainable sources of energy. Specifically, we presented the statement, "*The UC-system has to manage a complex budget to meet multiple priorities. To provide each campus with more sustainable sources of energy would require additional initial investments in new energy sources. Consequently, less funding would be available for other priorities.*" Half of the participants were shown an additional sentence that read "*Currently, the UC system spends a bit less than 2% of its overall budget on energy generation and purchased energy."* Then all respondents read the *prompt "please move the slider below to indicate how much funding should be allocated to more sustainable sources of energy at your campus. Relative to the current amount being spent, what percentage do you think your campus should spend in the future"*. Respondents saw anchors at 0% (nothing), 50% (half the current amount), 100% (same as the current amount), 150% (one and a half times the current amount) and 200% (double the current amount).

Overall, faculty members favored substantial budget increases for these efforts, with the mean slider value at 133.38%. We found no difference in budget increases between female and male faculty members (Figure 52). Faculty in all types of positions and at all campuses supported an increase in budget, with the highest mean increase from faculty at UCSD (145.86%) and the lowest from faculty at Berkeley (120.75%). The support seemed consistent across subgroups of faculty—essentially all subgroups we examined favored a budget of 120% or greater of the current allocation (Figure 48 and Figure 49).

Faculty generally supported increases in budget allocation to sustainability efforts, however our intervention augmented this support. By providing half the faculty members with additional contextual information about the current level of spending on sustainability, the mean value of the slider item increased to 139.34%, a statistically significant difference; $t(1298) = 2.28$, $p < .023$ (Figure 15).

These findings indicate that, when provided with contextual information about current levels of spending on energy by the UC system (less than 2%), faculty may support even greater future budget allocations to sustainability efforts.

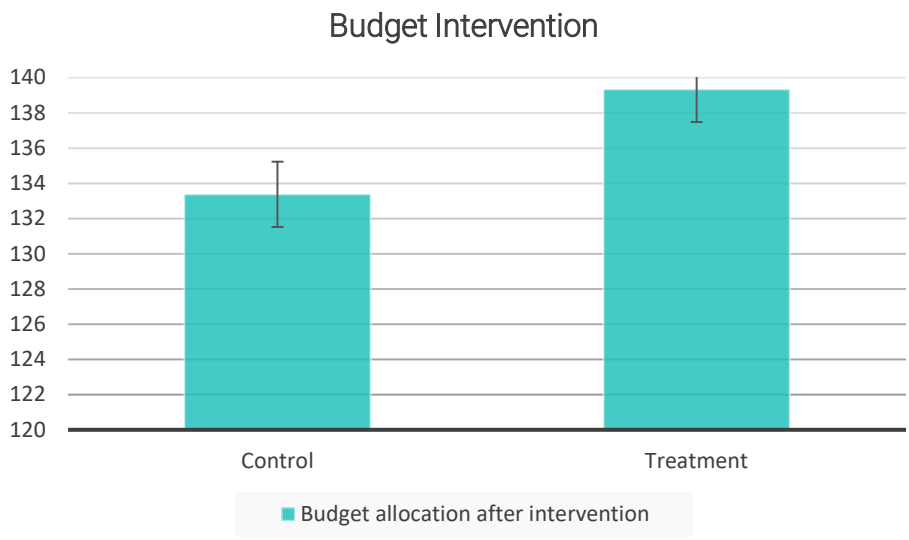

Figure 15. Faculty survey results: Budget intervention

Support for a Carbon Tax/Sustainability Fund

The idea of a putting a price on carbon has raised substantial interest and controversy among environmentalists and policymakers (particularly in California). We attempted to measure faculty attitudes towards such a policy within the UC system and to test whether the level of support increases if the idea is framed as a "carbon tax" or a "sustainability fund" that sets aside money for sustainability efforts.

For the participants we described the basic logistics of such a policy before asking their opinions on it. However, for half the participants, we referred to it as a "carbon tax" and for the other half we referred to it as a "sustainability fund." All faculty participants then responded to seven items about their support for or opposition to different approaches to creating such a fund at their campus, each on a 7-point scale.

We expected that faculty participants in the "sustainability fund" condition would be more supportive of the idea than those in the "carbon tax" condition, however this expectation was not borne out. In fact, there was no difference between the average support of those in the "fund" group (mean = 0.49) and those in the "tax" group (mean = 0.49); $t(1278) = -0.69$, $p = .488$ (Figure 16). One interpretation is that faculty members understand the policy, have informed opinions on the issue, and thus, their opinions are robust to a wording change. Importantly, these findings also suggest that while overall, faculty may not actively oppose this type of policy (7-item scale; overall mean = 0.49), they care a lot about how it might be implemented (e.g., strongly opposing the raising of student fees and strongly favoring providing incentives to reduce carbon footprints.

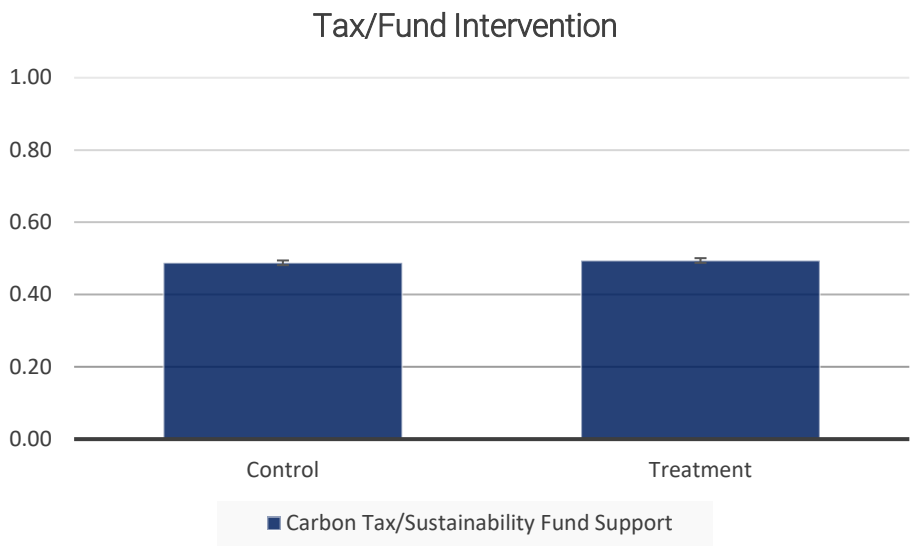

Figure 16. Faculty survey results: Tax/fund intervention

Environmental Values in Comparison to Other UC Priorities

University of California faculty care about multiple issues. At times, certain underlying values will conflict with other values (e.g., when funding for certain programs is constrained). In order to gauge the relative position of addressing environmental problems, we asked f participants to rank environmental values against three other core UC-system values in order of personal importance. The priorities were presented as: *Attaining and maintaining diversity across multiple populations on our campuses*, *Providing an affordable education for students*, *Eliminating our universities' negative environmental impacts as much as possible*, and *Conducting research that benefits society* (Table 15). Figure 17 depicts the average rank for each priority among participants. Bearing in mind that lower numbers correspond to higher ranks, the top ranked priority among all the faculty respondents was "affordable education," with a mean score of 2.0. "Conducting beneficial research" was a close second (m = 2.13). The pattern shown in the graph below remained unchanged for both female and male faculty, across campuses, positions, and area of study. There was a small but significant positive relationship between the rank of environmental concerns and years at the university such that newer UC faculty generally prioritized this concern higher than respondents who have been at their institutions longer; r =.081, p =.006.

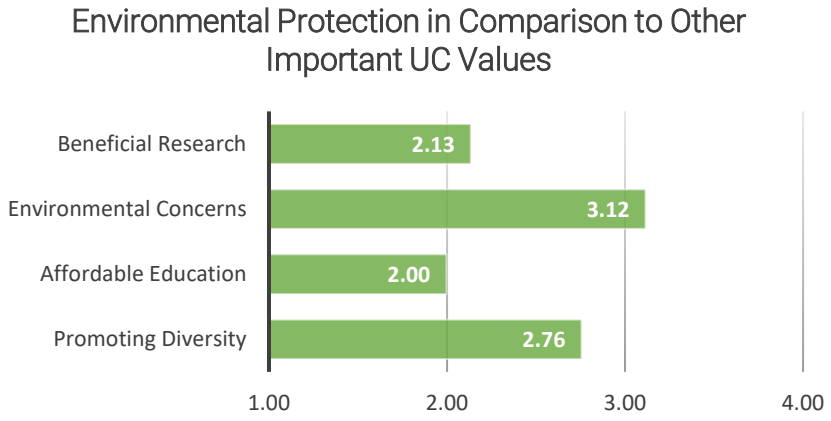

Figure 17. Faculty survey results: Environmental protection in comparison to other important UC values

Support for an Promotion Criteria

As another attempt to assess views toward potential environmental policies, we asked how much respondents would favor or oppose including environmental sustainability as a criterion for promotion. Specifically, we asked, "*imagine that a new optional category in merit/promotion discussions (alongside the mandatory categories of scholarship, teaching, professional activities, and service) was being proposed in the UC-system. Faculty who demonstrate excellence in this category could be helped; but people without excellence in this category would NOT be penalized*" and asked how much they would favor or oppose including environmental sustainability as one such optional category in promotion cases on a 9-point scale from *strongly oppose* to *strongly favor* (Figure 18).

Respondents neither favored nor opposed this idea, with a mean score of 0.50. Females responded slightly more positively about the idea (m = 0.54) than males (m = 0.47) (Figure 66). Postdocs supported this idea most strongly (m = 0.63); full professors opposed it most strongly (m = 0.35) (Figure 64).

Half of the participants who received this question block also saw an additional prompt before the question that read "*At UC we value infusing diversity into multiple aspects of campus life because it affects all of us. We care enough about diversity that it has become an informal category in merit and promotion cases for faculty. Similarly, what happens to our climate affects everyone. However, currently it is not a criterion for evaluation in our merit and promotion system.*"

By drawing a parallel between environmental protection and diversity as shared UC values, we anticipated that participants who read this prompt would favor this idea more than those who did not (i.e., they would see that we already engage in similar practices). However, we found the opposite to be true. Participants given this prompt reported less support for the promotion idea (m = 0.46) than those who did not (m = 0.51), $t(1319) = 2.50$, p =.013 (Figure 18).

Overall, participants seem neutral towards the idea of contributions to environment/sustainability as a promotion criterion. Similar to the sustainability fund or tax result, we interpret this finding as an indication of the degree to which faculty will tolerate different strategies to achieve carbon neutrality. The backfire effect of the intervention may suggest that care should be taken when drawing comparisons between sustainability efforts and diversity or other important values. As respondents indicated in our ranking item regarding relative priorities, they generally value diversity more strongly than reducing UC's impact on the environment. Thus, if they sense an implicit contrast or comparison between values when presenting new policy ideas, it could produce unexpected reactions.

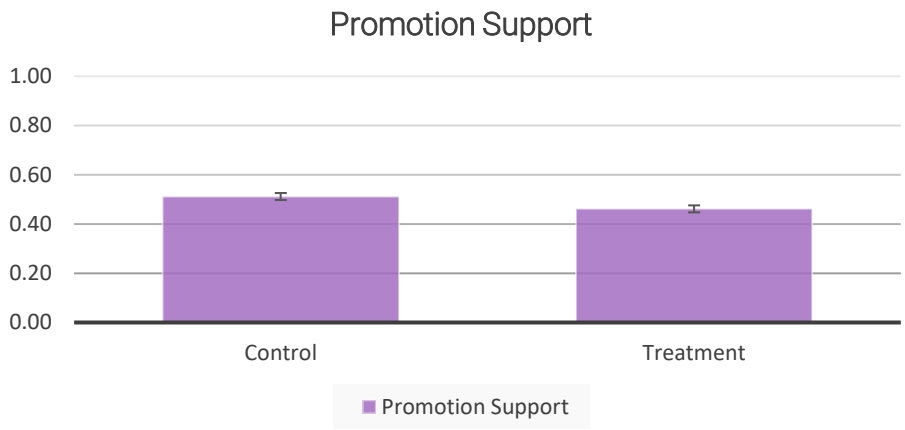

Figure 18. Faculty survey results: Promotion support

Perhaps the most interesting finding related to this question was the differences by years at institution (Figure 19). Newer faculty viewed this prospective policy with much more enthusiasm than faculty who had

been at their institutions for more years (r = -.24). In combination with the higher valuing of the environment on the ranking item, these results suggest that newer faculty may see tradeoffs around environmental issues in slightly different ways than their colleagues who have been at their institutions for longer.

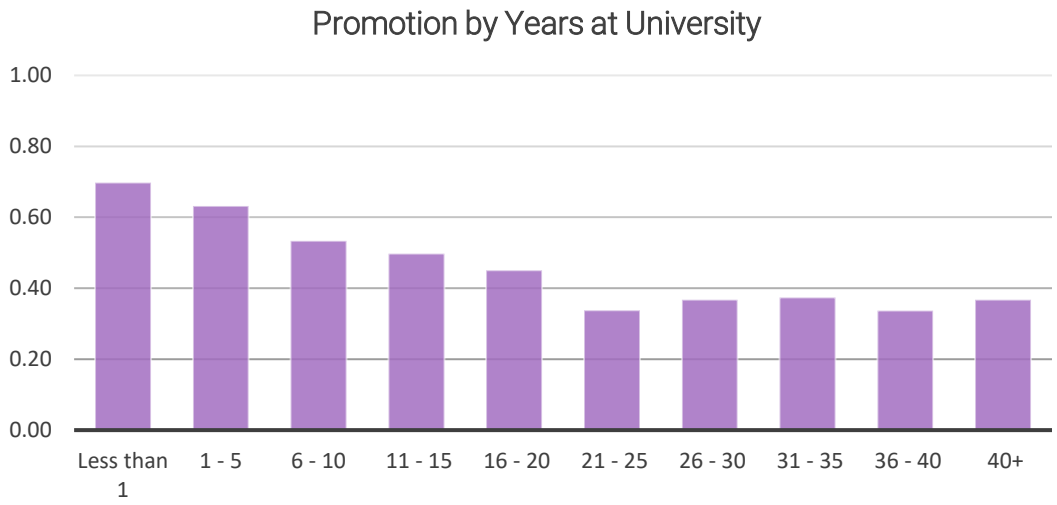

Figure 19. Faculty survey results: Promotion by years at university

The UC System as a Leader

Finally, because California is emerging as a national and international leader on climate, we wanted to get a sense of how the UC system's importance as a leader on climate issues is viewed. Specifically, we asked, "*How important is it for the UC campuses to play a leading role in moving the state of California towards carbon neutrality?"* Overall, the mean among all participants on this item was a 0.79. For them it seems that the UC system being a leader in California for combating climate change is quite important (Figure 20).

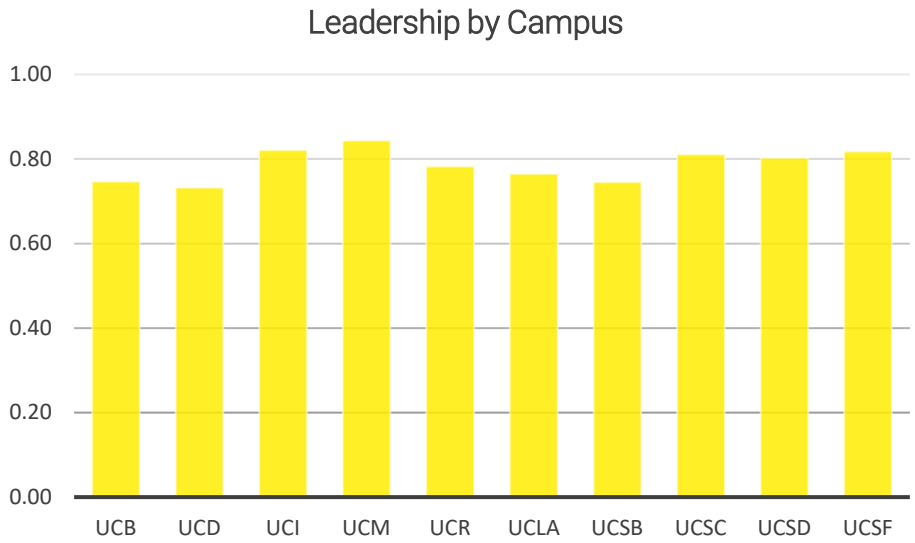

Figure 20. Faculty survey results: Leadership by campus

Additional Tables and Figures

Environmental Attitudes and Behaviors Figures

Table 6. Faculty survey results: Environmental attitudes items

Environmental Attitudes Items	Scale	M	SD
How important is it for people to conserve natural resources whenever possible?	1 (*Not at all important*) - 5 (*Extremely important*)	0.88	0.17
To what extent do you favor or oppose paying more for products so that they can be made in more environmentally-friendly ways?	1 (*Strongly oppose*) - 7 (*Strong favor*)	0.82	0.22
When people develop land, how important is it for them to consider the rights of wildlife in that area?	1 (*Not at all important*) - 5 (*Extremely important*)	0.82	0.22
How much do you favor or oppose paying more for energy to protect the environment from pollution?	1 (*Strongly oppose*) - 7 (*Strong favor*)	0.86	0.22
How problematic do you think our current treatment of the environment will be for future generations?	1 (*Not at all problematic*) - 5 (*Extremely problematic*)	0.89	0.20
To what extent do you favor or oppose government regulations as a way to protect natural habitats?	1 (*Strongly oppose*) - 7 (*Strong favor*)	0.91	0.20
How much, if at all, are humans mistreating the environment?	1 (*Not mistreating at all*) - 5 (*Mistreating a great deal*)	0.88	0.20
When you make purchases for your job, how important are environmental considerations in the purchasing decision?	1 (*Not at all important*) - 5 (*Extremely important*)	0.57	0.29
	Total	0.83	0.17

Table 7. Faculty survey results: Environmental behaviors items

Environmental Behaviors Items	Scale	M	SD
How often do you talk to others on campus about environmental concerns?	1 (*Almost never*) - 5 (*Almost all the time*)	0.51	0.27
How often do you take actions to support environmental initiatives on campus?	1 (*Almost never*) - 5 (*Almost all the time*)	0.56	0.30
How often do you attempt to conserve water while you are on campus?	1 (*Almost never*) - 5 (*Almost all the time*)	0.83	0.24
How much effort do you put into persuading colleagues to adopt environmentally-friendly practices?	1 (*Almost never*) - 5 (*Almost all the time*)	0.42	0.28
	Total	0.58	0.21

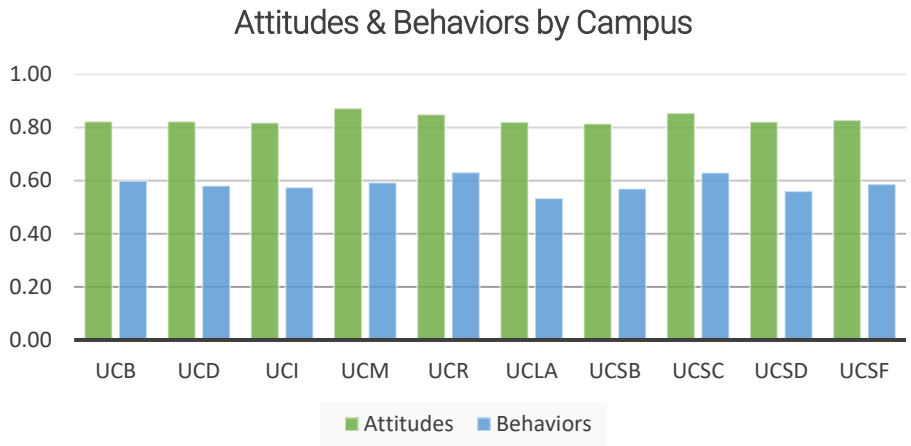

Figure 21. Faculty survey results: Attitude and behaviors by campus

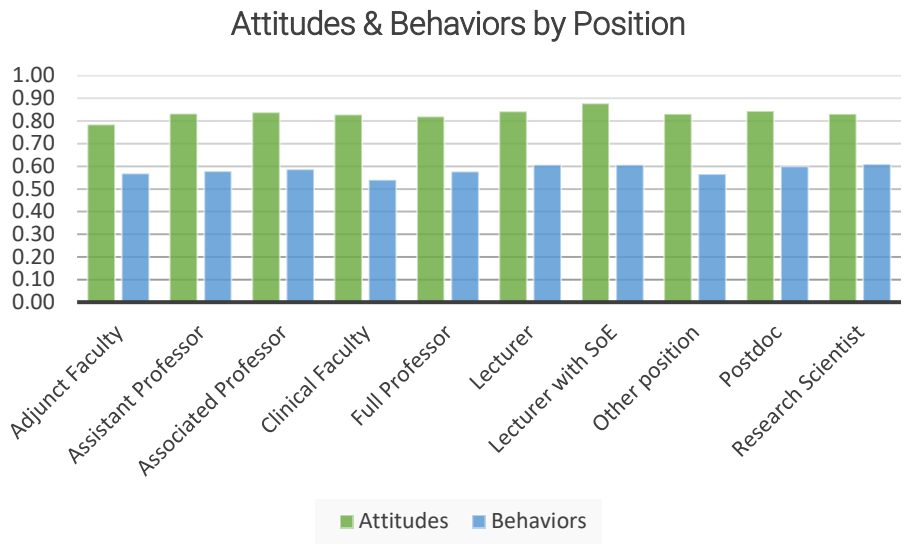

Figure 22. Faculty survey results: Attitude and behaviors by position

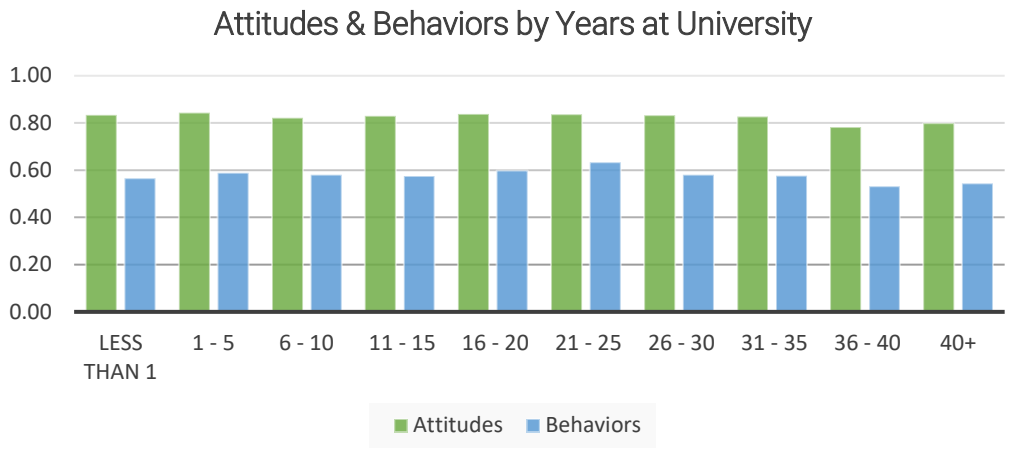

Figure 23. Faculty survey results: Attitude and behaviors by years at university

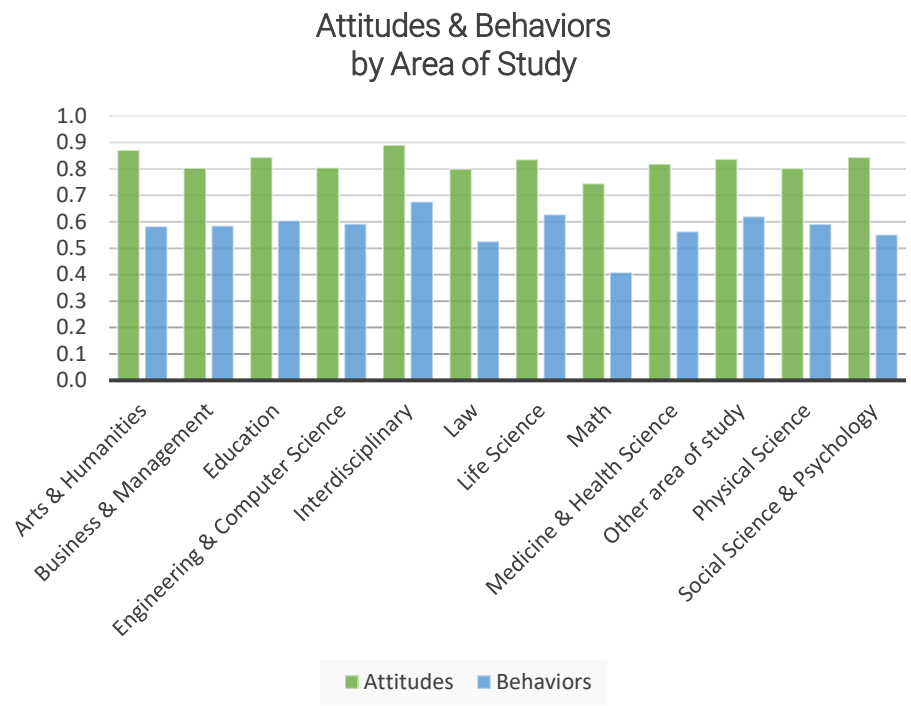

Figure 24. Faculty survey results: Attitude and behaviors by area of study

Figure 25. Faculty survey results: Attitude and behaviors by gender

Climate Change Problems Figures

Table 8. Faculty survey results: Climate change problems items

Climate Change Problem Items	Scale	M	SD
Some people think that problems related to climate change will be broad--extending to almost all aspects of life; others think that these problems will be narrow--affecting only a couple aspects of life. For your university, how broad or narrow do you think the effects of climate change will be?	0 (*Extremely narrow*) - 100 (*Extremely broad*)	0.77	0.23
Some people think that problems related to climate change will be severe; others think that these problems will be mild. For your university, how severe or mild do you think the effects of climate change will be?	0 (*Extremely mild*) - 100 (*Extremely severe*)	0.75	0.23
Some people think that problems related to climate change will need to be addressed immediately; others think that there is plenty of time to address these problems. How urgently do you think your university needs to address the effects of climate change?	0 (*Not at all urgently*) - 100 *(Extremely urgently*)	0.82	0.23
When do you think global warming will start to harm faculty in the UC system?	1 (*They are being harmed right now*) - 6 (*Never*)	0.81	0.25
How worried are you about global warming?	1 (*Not at all worried*) - 4 (*Very worried*)	0.85	0.24
How much do you think global warming will harm people in the United States?	1 (*Not at all*) - 4 (*A great deal*)	0.90	0.21
	Total	0.82	.20

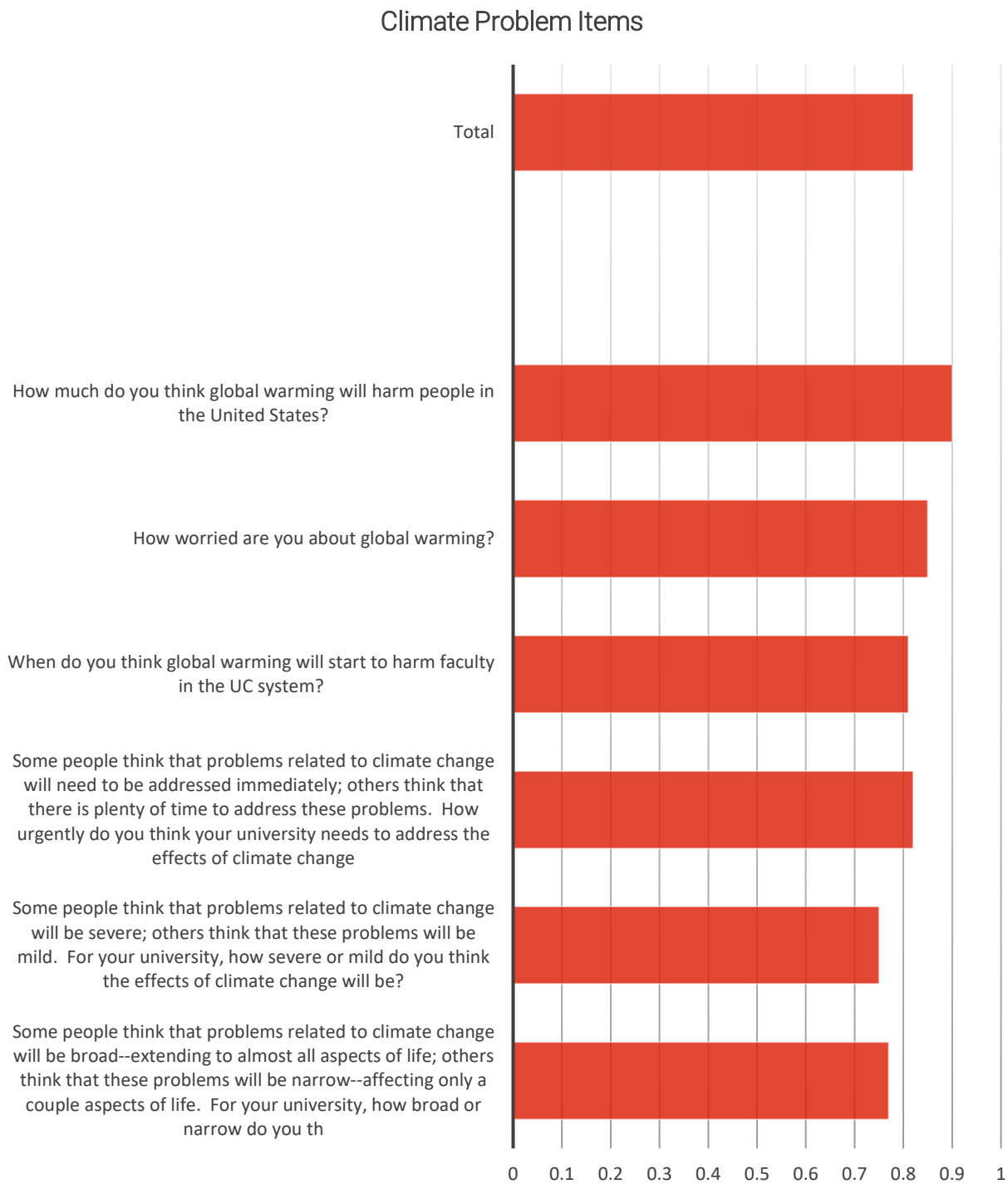

Figure 26. Faculty survey results: Climate problems items

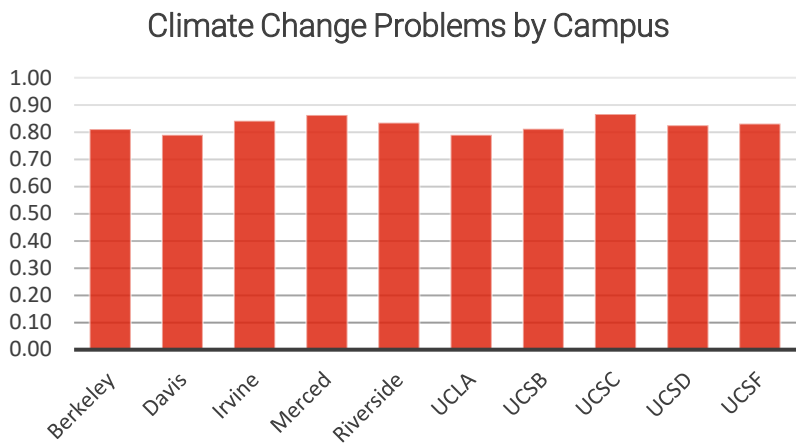

Figure 27. Faculty survey results: Climate problems by campus

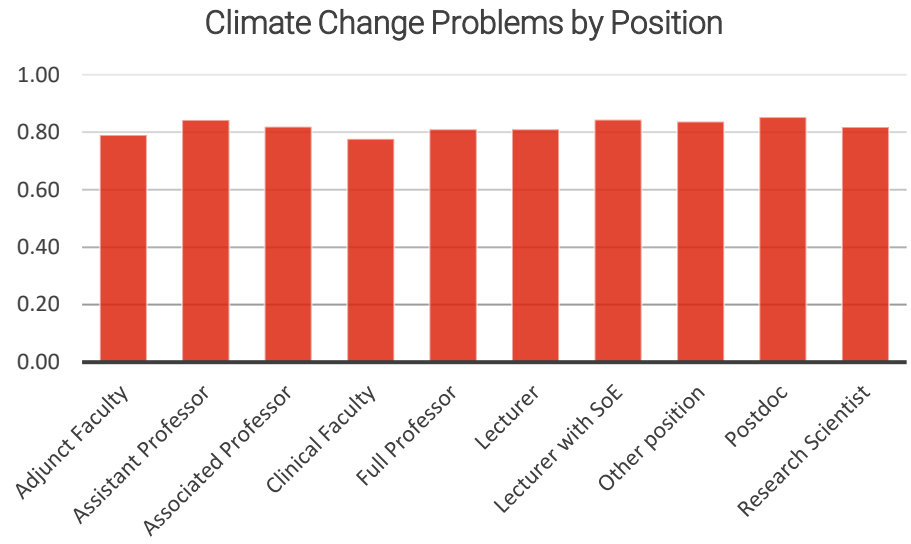

Figure 28. Faculty survey results: Climate problems by position

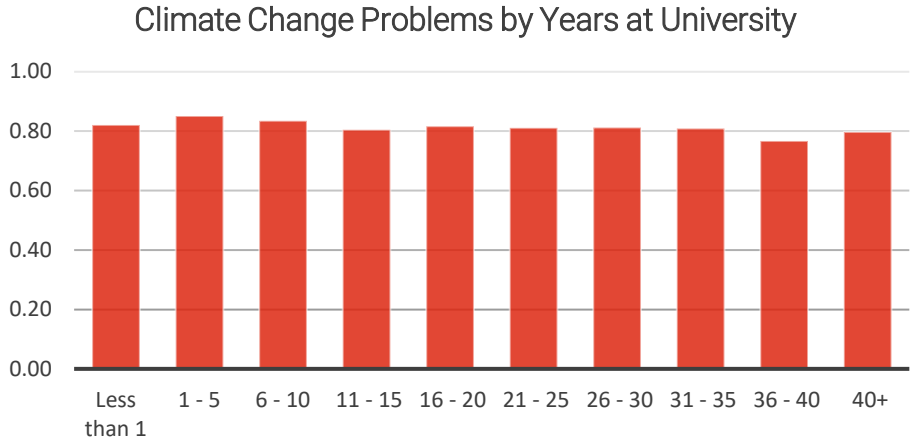

Figure 29. Faculty survey results: Climate problems by years at university

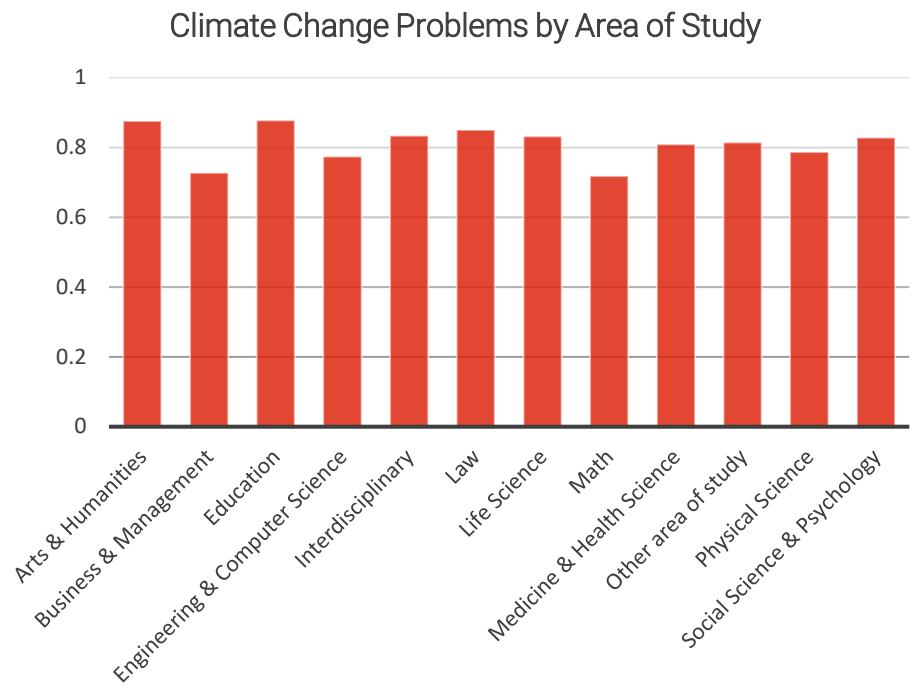

Figure 30. Faculty survey results: Climate problems by area of study

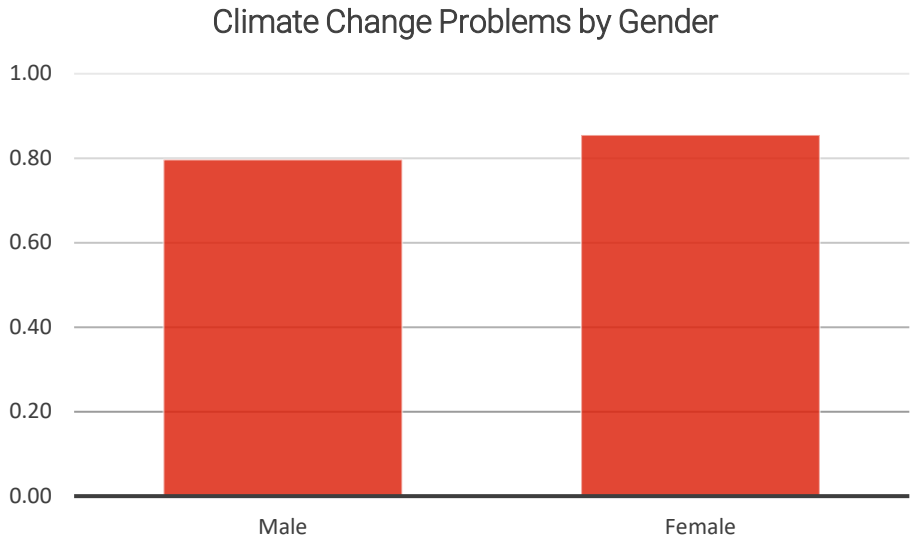

Figure 31. Faculty survey results: Climate problems by gender

Collective Efficacy Figures

Table 9. Faculty survey results: Collective efficacy items

Collective Efficacy Items	Scale	M	SD
How optimistic or pessimistic are you that the campus operations across the UC-system can become carbon neutral by 2025?	1 (*very pessimistic*) - 7 (*very optimistic*)	0.58	0.29
How confident are you that the other UC campuses will do their fair share to achieve the goal of carbon neutrality by 2025?	1 (*not at all confident*) - 5 (*extremely confident*)	0.52	0.26
How much influence do the faculty have in helping the UC-system become carbon neutral?	1 (*almost no influence*) - 5 (*a great deal of influence*)	0.50	0.26
In the next few years, how effective do you think the UC community will be in addressing challenging environmental problems?	1 (*not at all effective*) - 5 (*extremely effective*)	0.54	0.22
How confident are you that UC Office of the President will do their fair share to achieve the goal of carbon neutrality by 2025?	1 (*not at all confident) - 5 (extremely confident)*	0.49	0.27
	Total	0.52	0.21

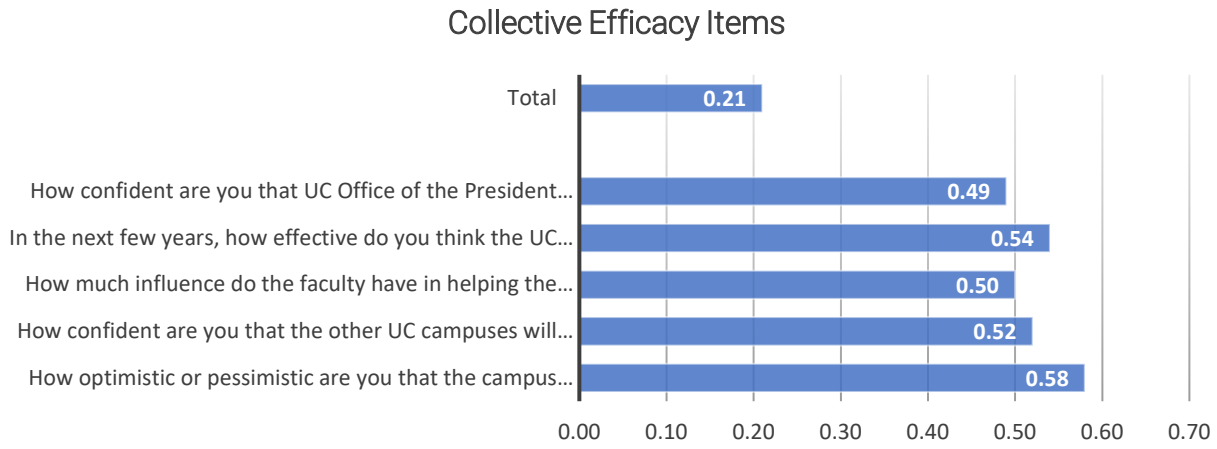

Figure 32. Faculty survey results: Collective efficacy items

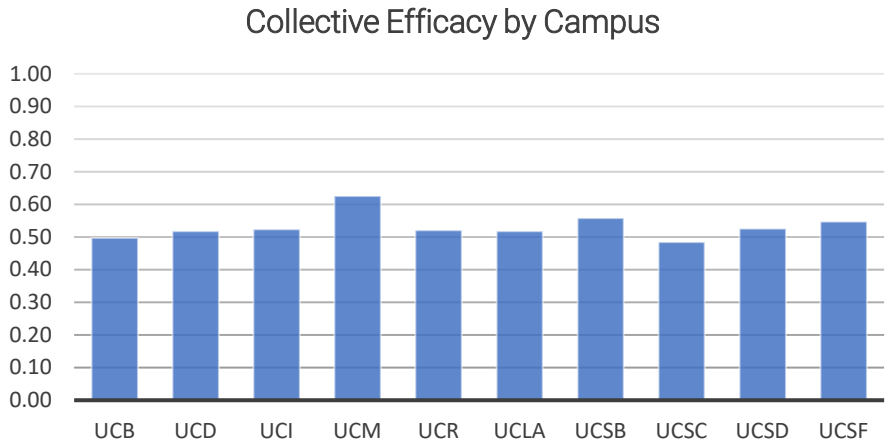

Figure 33. Faculty survey results: Collective efficacy by campus

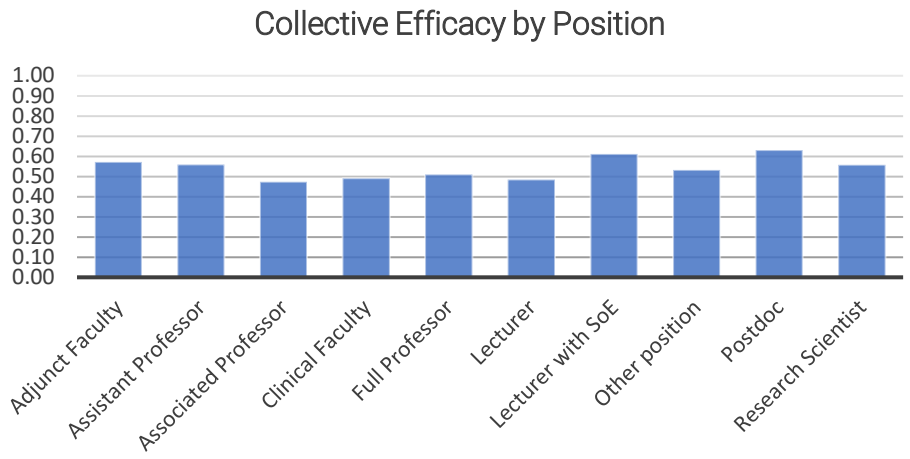

Figure 34. Faculty survey results: Collective efficacy by position

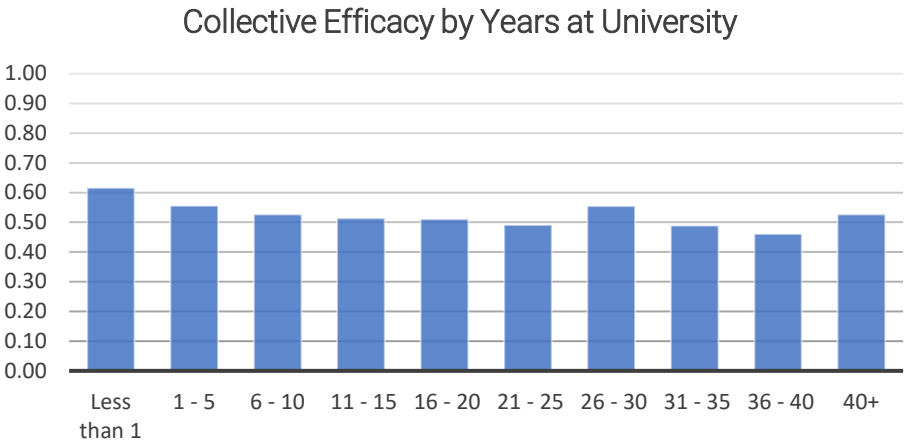

Figure 35. Faculty survey results: Collective efficacy by years at university

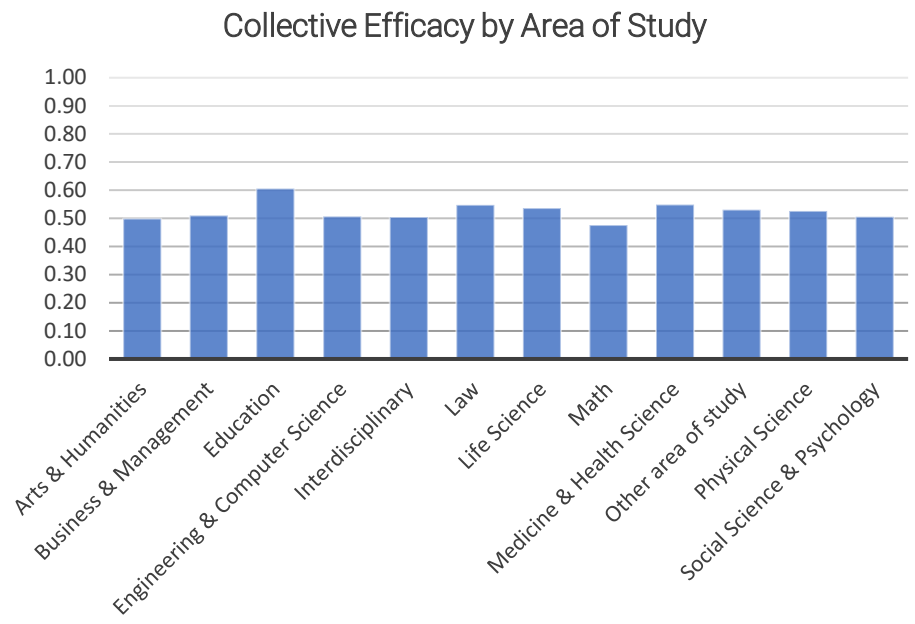

Figure 36. Faculty survey results: Collective efficacy by area of study

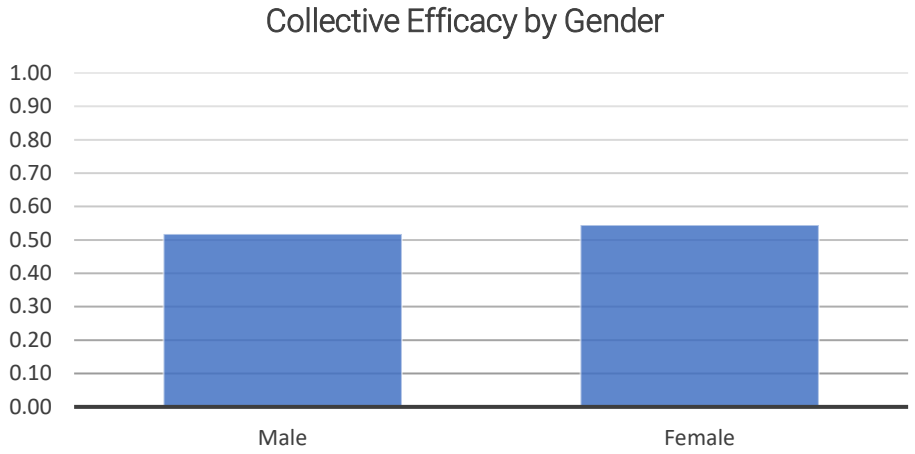

Figure 37. Faculty survey results: Collective efficacy by gender

Roadblocks Figures

Table 10. Faculty survey results: Roadblock items

Roadblocks Items	Scale	M	SD
The problem is too large to surmount.	1 (*will not be a barrier at all*) - 5 (*an extremely large barrier*)	2.75	1.12
Faculty will think their efforts are too small to make a difference	1 (*will not be a barrier at all*) - 5 (*an extremely large barrier*)	2.77	0.96
Faculty won't get invested in the initiative.	1 (*will not be a barrier at all*) - 5 (*an extremely large barrier*)	2.83	0.98
The lack of funding for the initiative.	1 (*will not be a barrier at all*) - 5 (*an extremely large barrier*)	3.91	0.88
Making the needed changes by 2025 is unrealistically soon	1 (*will not be a barrier at all*) - 5 (*an extremely large barrier*)	2.80	1.03
Faculty will resist the personal sacrifices they may need to make	1 (*will not be a barrier at all*) - 5 (*an extremely large barrier*)	2.90	1.00
	Total	3.00	0.65

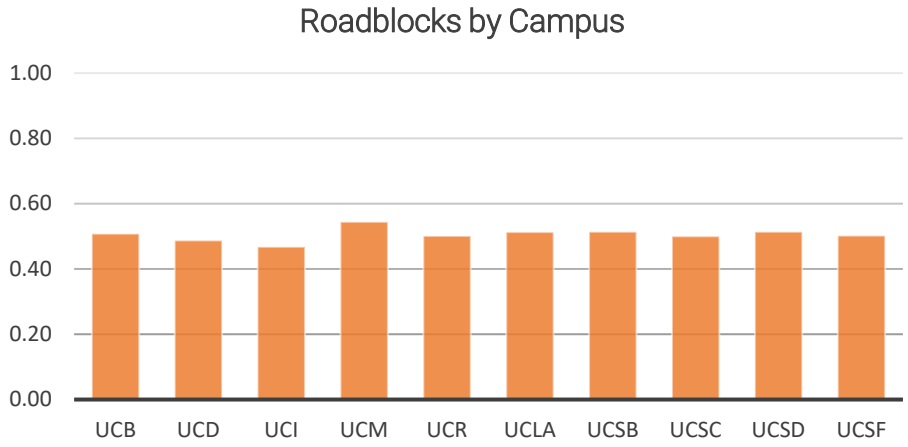

Figure 38. Faculty survey results: Roadblocks by campus

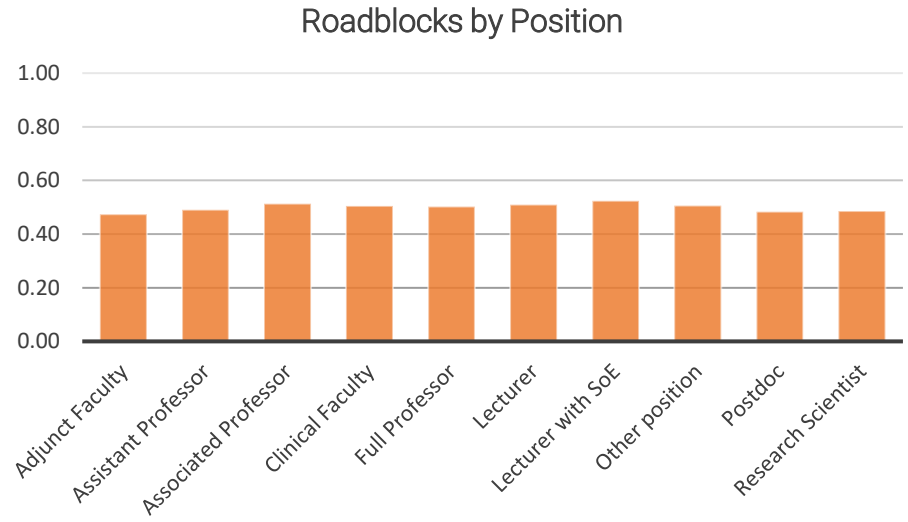

Figure 39. Faculty survey results: Roadblocks by position

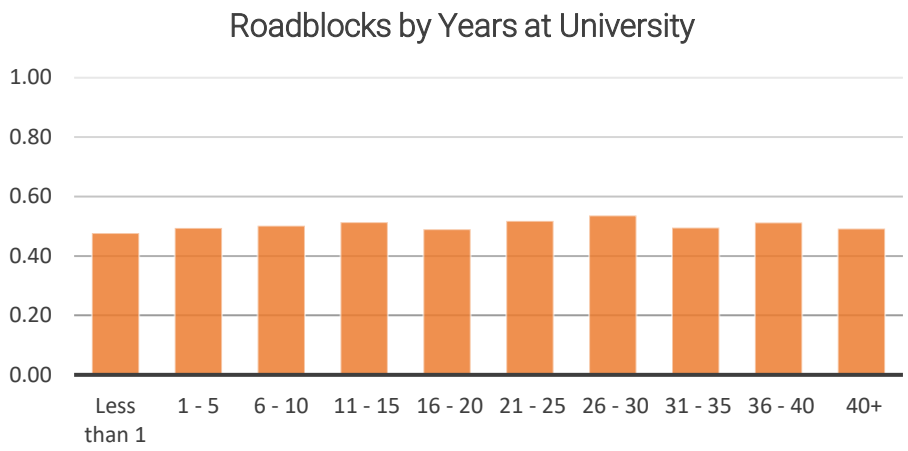

Figure 40. Faculty survey results: Roadblocks by years at university

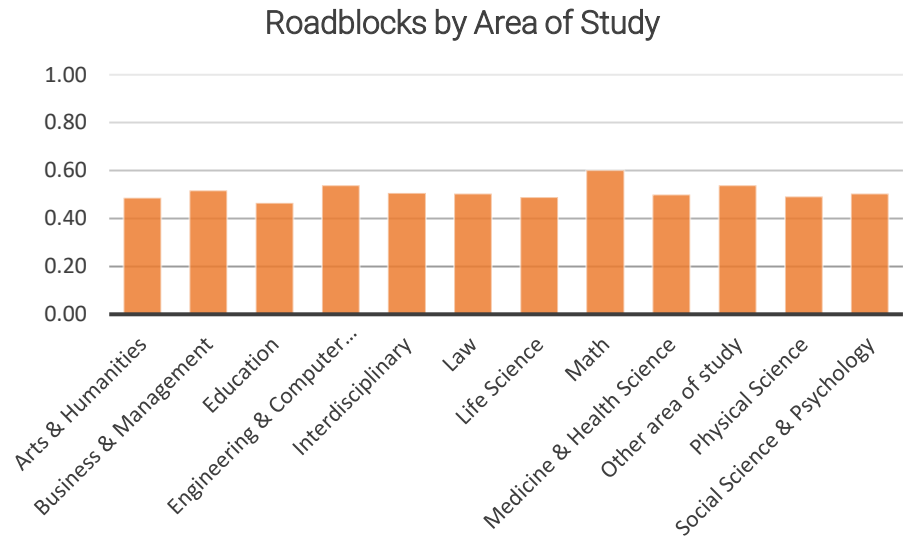

Figure 41. Faculty survey results: Roadblocks by area of study

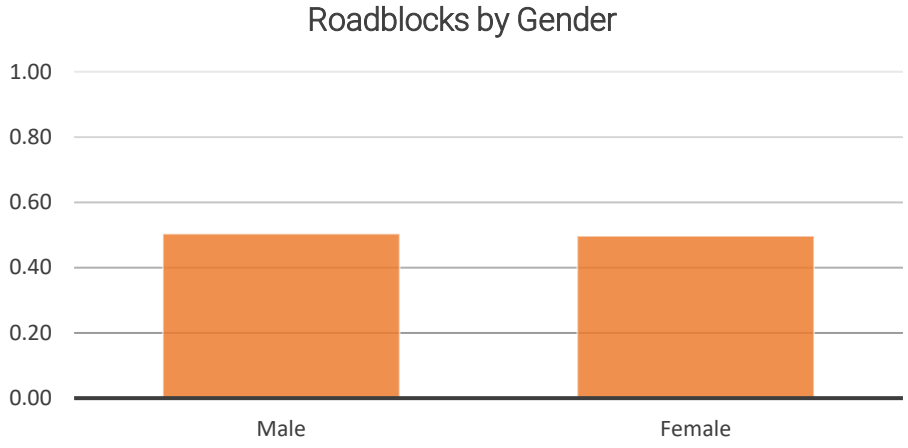

Figure 42. Faculty survey results: Roadblocks by gender

Policies Figures

Table 11. Faculty survey results: Policies items

Policies Items	Scale	M	SD
INVEST IN ENERGY EFFICIENCY: By increasing the energy efficiency of existing buildings your campus would use the saved costs to fund other renewable energy programs.	1 (*Strongly oppose*) -7 (*Strongly favor*)	6.50	1.01
GENERATE RENEWABLE ENERGY ON CAMPUS: Your campus contracts with companies to install renewable energy generation technologies (e.g., solar, wind, bio-gas) and then purchases the energy generated from those companies.	1 (*Strongly oppose*) -7 (*Strongly favor*)	6.04	1.45
PURCHASE ENERGY FROM UC-MANAGED RENEWABLE PROJECTS: Your campus purchases energy generated at large-scale renewable energy facilities (e.g., solar, wind, biogas) established through agreements between companies and the UC Office of the President. This renewable energy is delivered to campuses through existing utility grids.	1 (*Strongly oppose*) -7 (*Strongly favor*)	5.97	1.39
PURCHASE RENEWABLE ENERGY: Your campus pays a premium to purchase renewable electricity from the utility grid.	1 (*Strongly oppose*) -7 (*Strongly favor*)	5.21	1.73
INCENTIVIZE BEHAVIOR CHANGES: Your campus funds programs to incentivize members of the campus community to reduce energy demand by changing their behaviors.	1 (*Strongly oppose*) -7 (*Strongly favor*)	6.03	1.40
PURCHASE CARBON OFFSETS: Your campus purchases credits to offset their emissions (by paying others to pollute less or to capture carbon).	1 (*Strongly oppose*) -7 (*Strongly favor*)	4.04	1.87
	Total	5.63	1.10

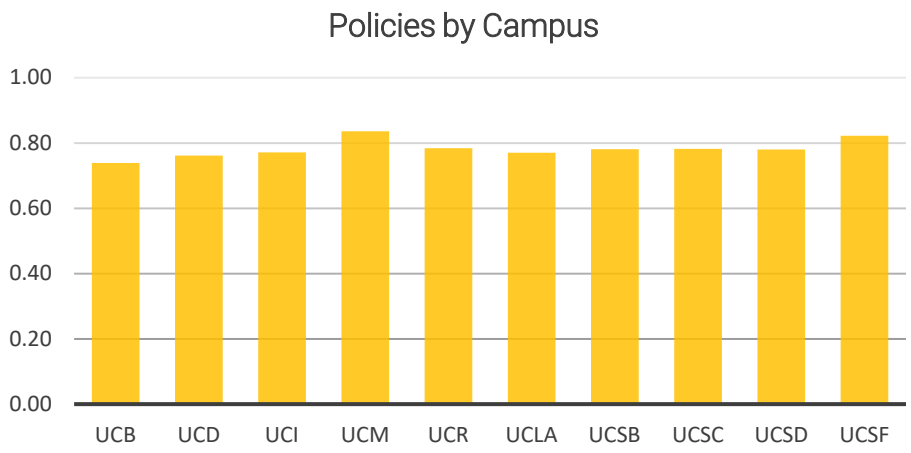

Figure 43. Faculty survey results: Policies by campus

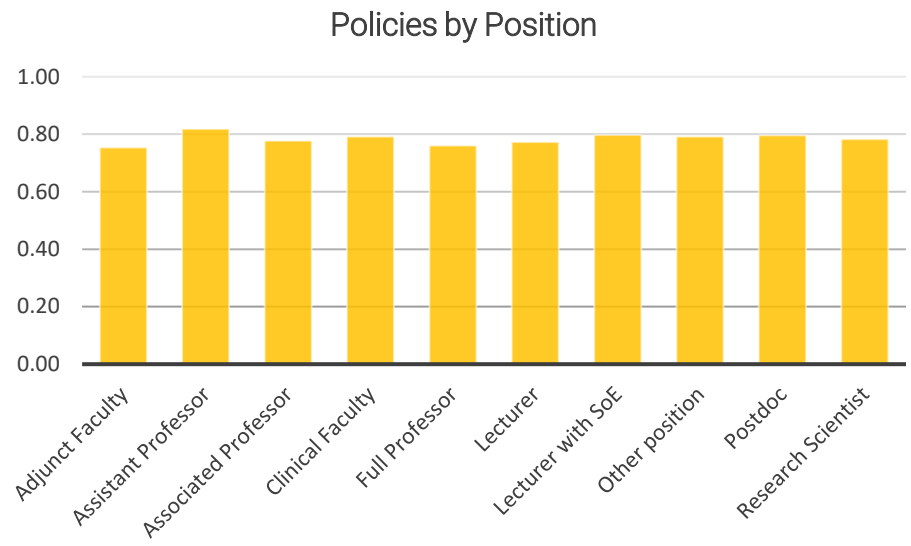

Figure 44. Faculty survey results: Policies by position

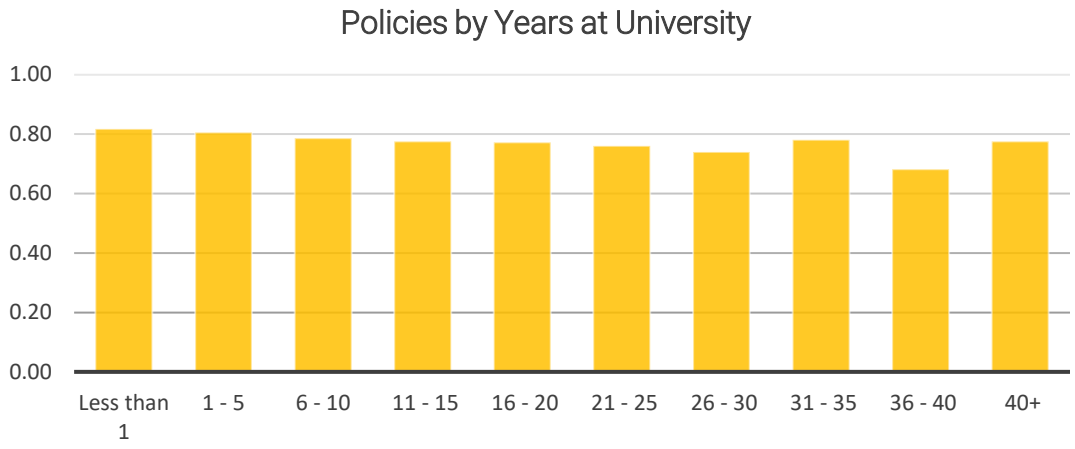

Figure 45. Faculty survey results: Policies by years at university

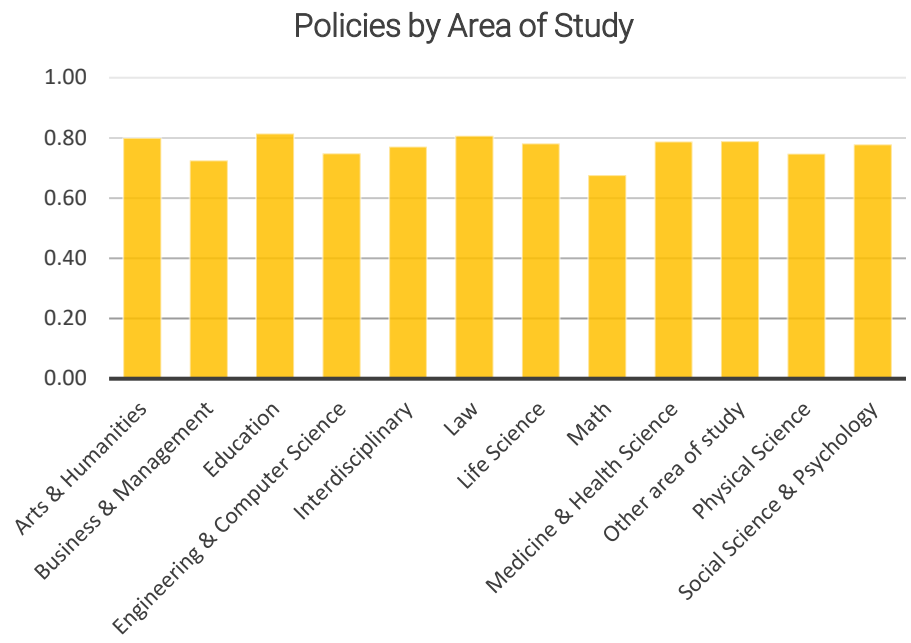

Figure 46. Faculty survey results: Policies by area of study

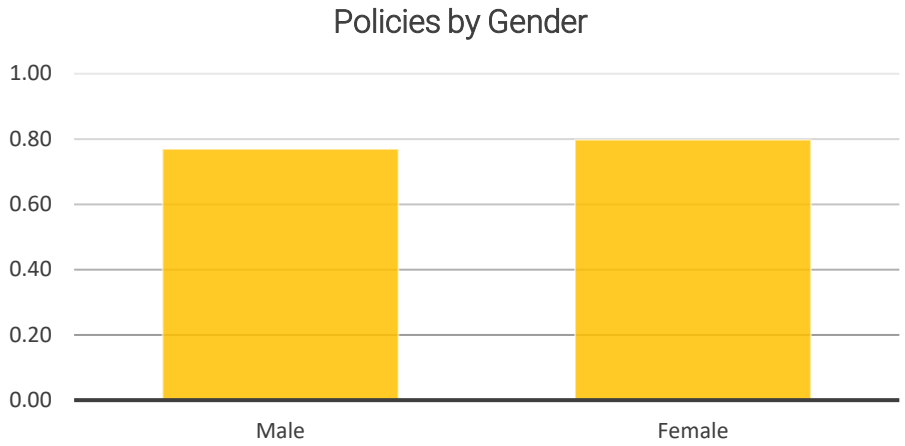

Figure 47. Faculty survey results: Policies by gender

Budget Allocation Figures

Table 12. Faculty survey results: Budget allocation items

Budget Allocation Item	Scale	M	SD
Please move the slider below to indicate how much funding should be allocated to more sustainable sources of energy at your campus. Relative to the current amount being spent, what percentage do you think your campus should spend in the future.	0% (*Nothing*) - 200% (*Double the current amount*)	4.07	2.17

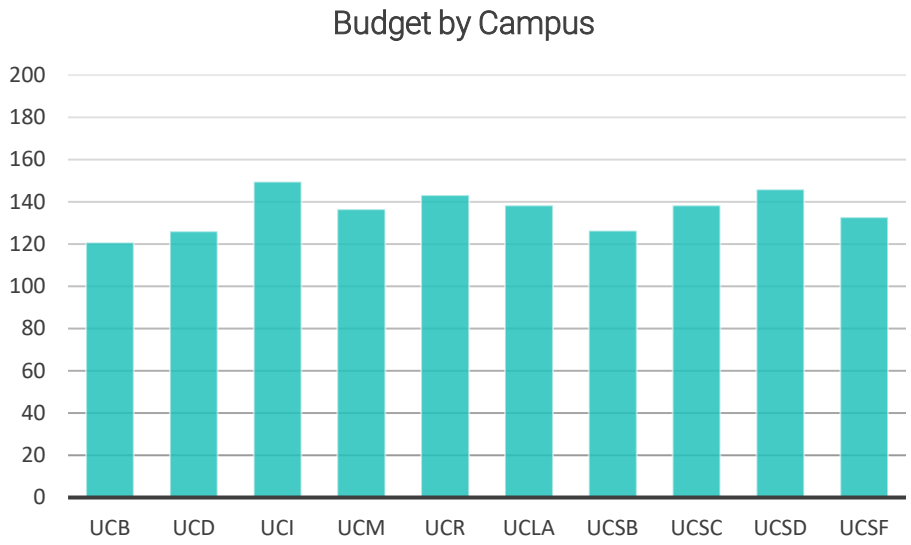

Figure 48. Faculty survey results: Budget by campus

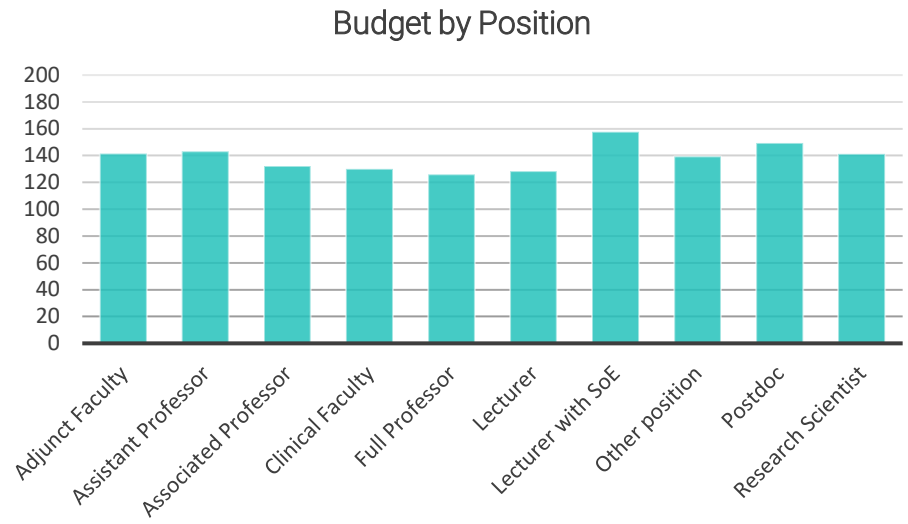

Figure 49. Faculty survey results: Budget by position

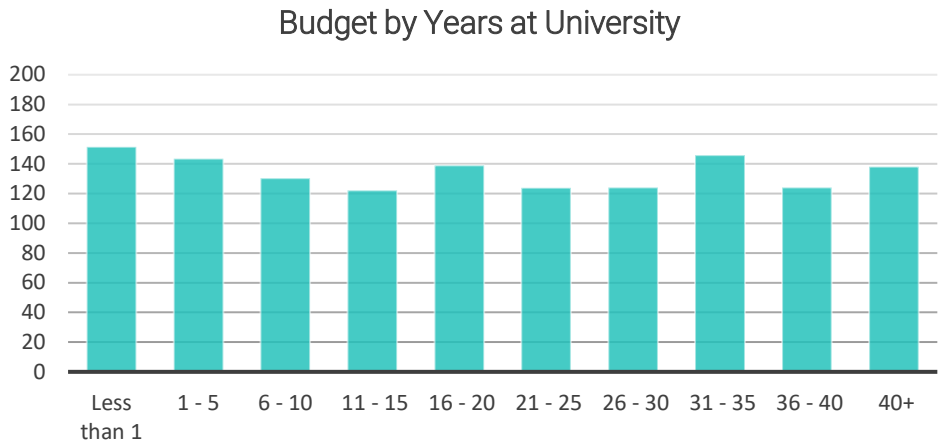

Figure 50. Faculty survey results: Budget by years at university

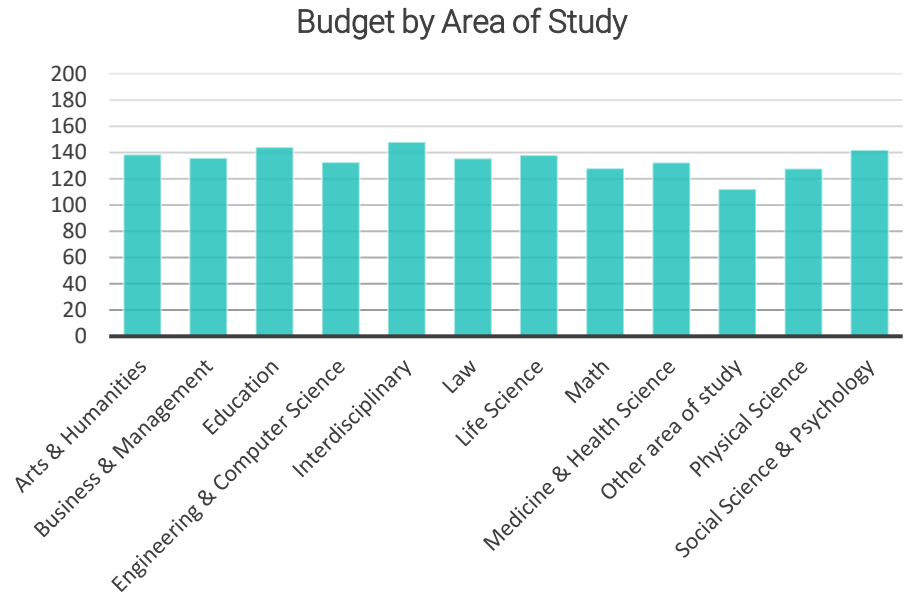

Figure 51. Faculty survey results: Budget by area of study

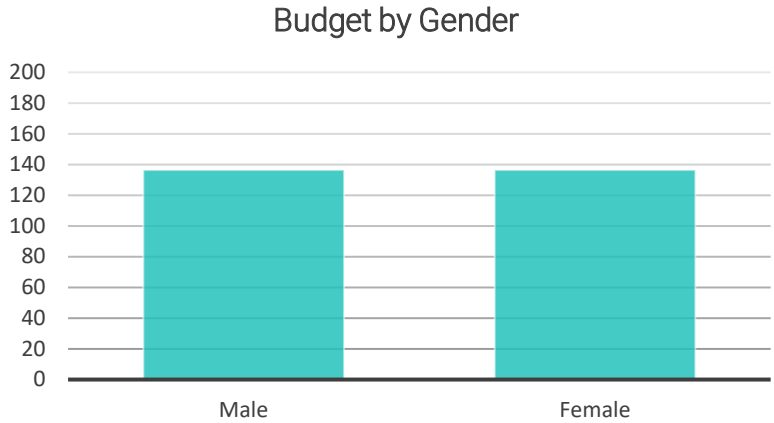

Figure 52. Faculty survey results: Budget by gender

Carbon Tax/Sustainability Fund

Table 13. Faculty survey results: Carbon tax items

Carbon Tax Items	Scale	M	SD
Make the tax proportional so that the largest energy users on your campus pay the most tax	1 (*Strongly oppose*) -7 (*Strongly favor*)	5.13	1.76
Split the tax evenly between all members of the campus (regardless of energy consumption)	1 (*Strongly oppose*) -7 (*Strongly favor*)	2.94	1.66
Pay for the carbon tax by raising student fees.	1 (*Strongly oppose*) -7 (*Strongly favor*)	2.18	1.55
Base the carbon tax on how much space is taken up by faculty's offices and labs	1 (*Strongly oppose*) -7 (*Strongly favor*)	3.44	1.85
Pay for the carbon tax through "indirect costs" from grants given to your university.	1 (*Strongly oppose*) -7 (*Strongly favor*)	3.94	1.97
Allow certain campus units to pay other campus units to consume less carbon so that the original units can claim carbon footprint reductions	1 (*Strongly oppose*) -7 (*Strongly favor*)	4.09	1.83
Rather than having a carbon tax, facilities managers should regulate energy use by providing incentives for carbon footprint reductions	1 (*Strongly oppose*) -7 (*Strongly favor*)	5.79	1.41
	Total	3.93	1.00

Table 14. Faculty survey results: Sustainability fund items

Sustainability Fund Items	Scale	M	SD
Make the fund proportional so that the largest energy users on your campus pay the most tax	1 (*Strongly oppose*) -7 (*Strongly favor*)	5.43	1.76
Split the fund evenly between all members of the campus (regardless of energy consumption)	1 (*Strongly oppose*) -7 (*Strongly favor*)	2.91	1.64
Pay for the sustainability fund by raising student fees.	1 (*Strongly oppose*) -7 (*Strongly favor*)	2.32	1.57
Base the sustainability fund on how much space is taken up by faculty's offices and labs	1 (*Strongly oppose*) -7 (*Strongly favor*)	3.50	1.80
Pay for the sustainability fund through "indirect costs" from grants given to your university.	1 (*Strongly oppose*) -7 (*Strongly favor*)	4.07	1.93
Allow certain campus units to pay other campus units to consume less carbon so that the original units can claim carbon footprint reductions	1 (*Strongly oppose*) -7 (*Strongly favor*)	4.08	0.75
Rather than having a sustainability fund, facilities managers should regulate energy use by providing incentives for carbon footprint reductions	1 (*Strongly oppose*) -7 (*Strongly favor*)	5.65	1.43
	Total	3.97	0.97

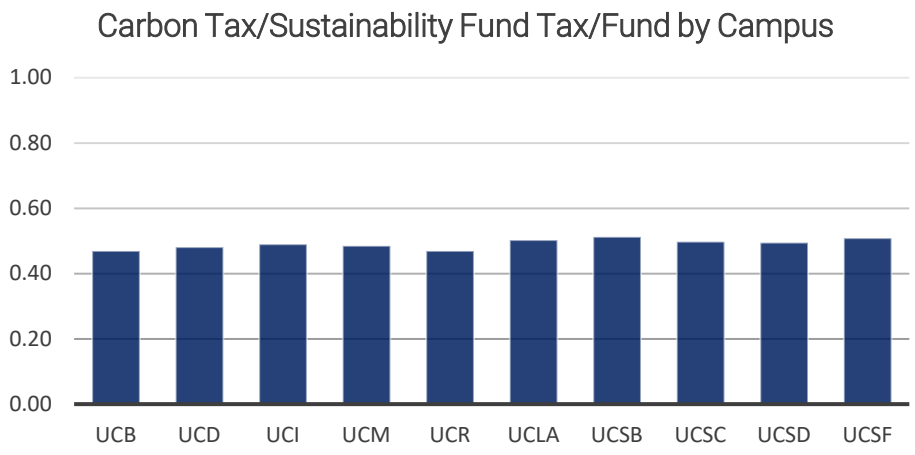

Figure 53. Faculty survey results: Carbon tax/sustainability fund items by campus

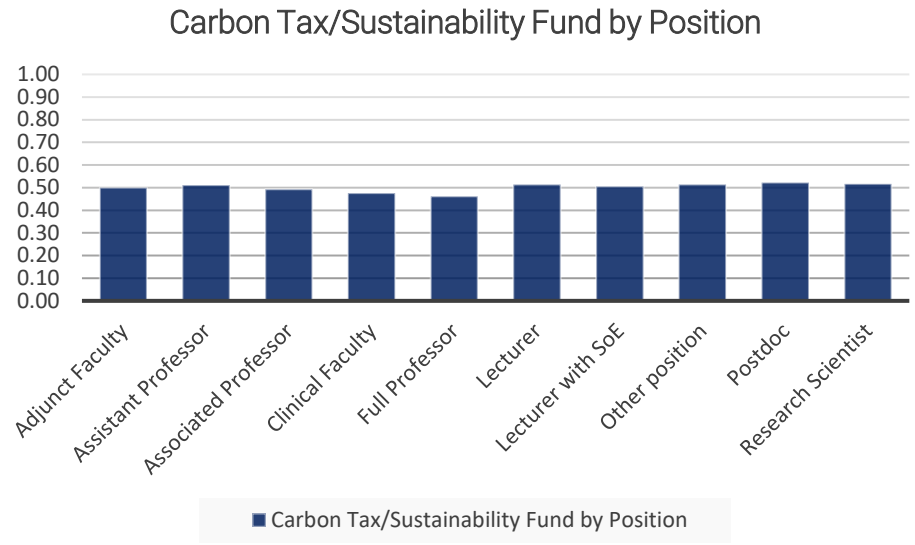

Figure 54. Faculty survey results: Carbon tax/sustainability fund items by position

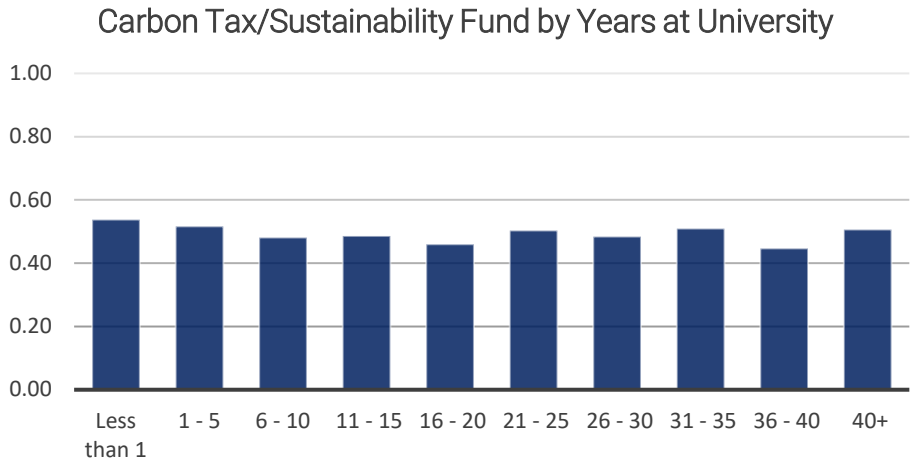

Figure 55. Faculty survey results: Carbon tax/sustainability fund items by years at university

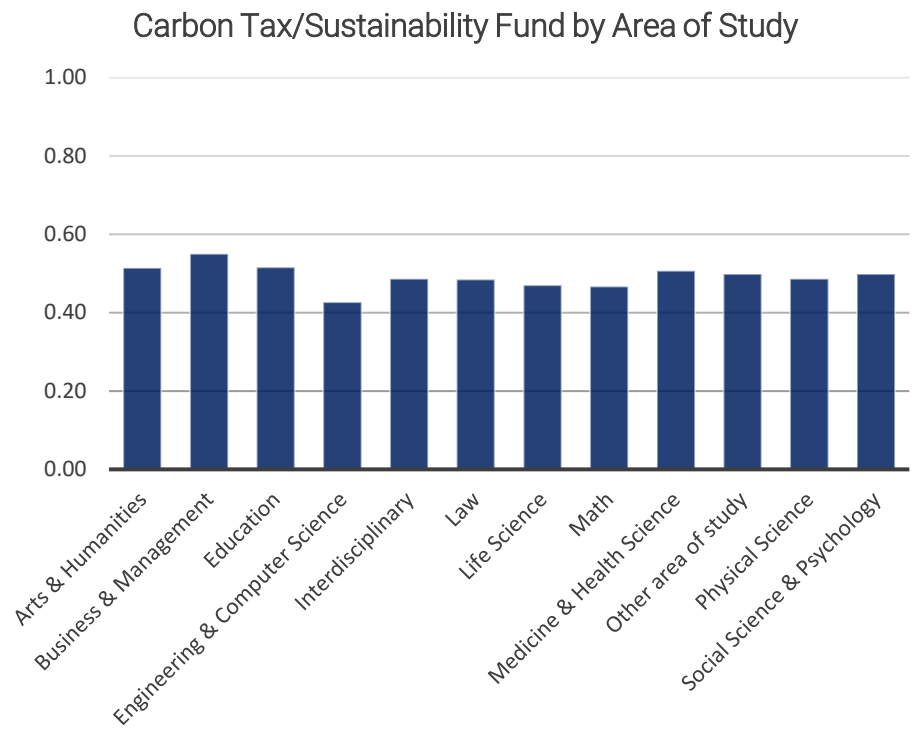

Figure 56. Faculty survey results: Carbon tax/sustainability fund items by area of study

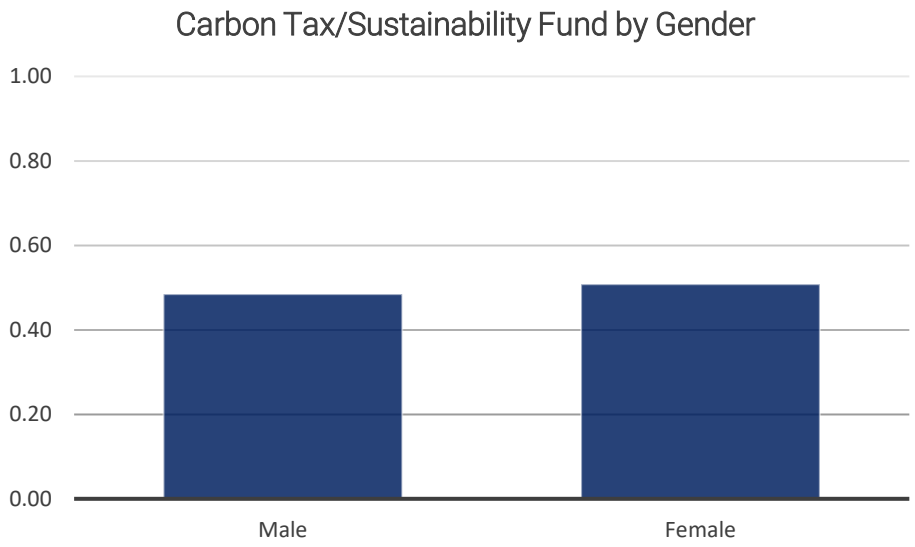

Figure 57. Faculty survey results: Carbon tax/sustainability fund items by gender

Environmental Values Figures

Table 15. Faculty survey: Environmental values to rank

Environmental Values to Rank	Scale	M	SD
Attaining and maintaining diversity across multiple populations on our campuses	1 (*Highest Rank*) - 4 (*Lowest Rank*)	2.76	1.02
Providing an affordable education for students	1 (*Highest Rank*) - 4 (*Lowest Rank*)	2.00	0.99
Eliminating our universities' negative environmental impacts as much as possible	1 (*Highest Rank*) - 4 (*Lowest Rank*)	3.12	0.98
Conducting research that benefits society	1 (*Highest Rank*) - 4 (*Lowest Rank*)	2.13	1.09

*Note: Given that a rank of 1 is the highest priority, a lower number is better here.

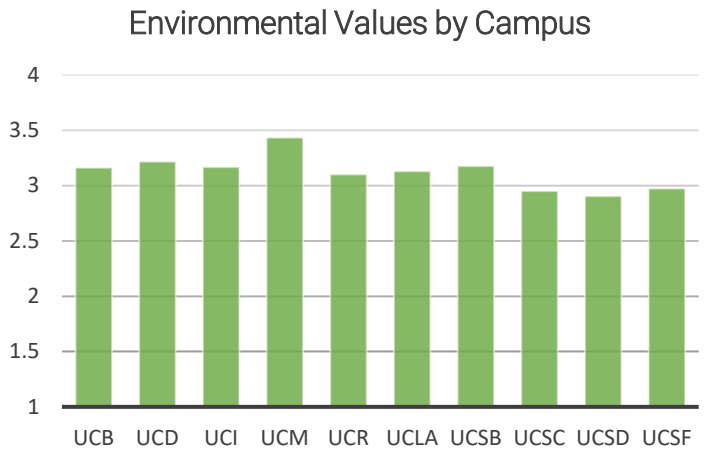

Figure 58. Faculty survey results: Environmental values by campus

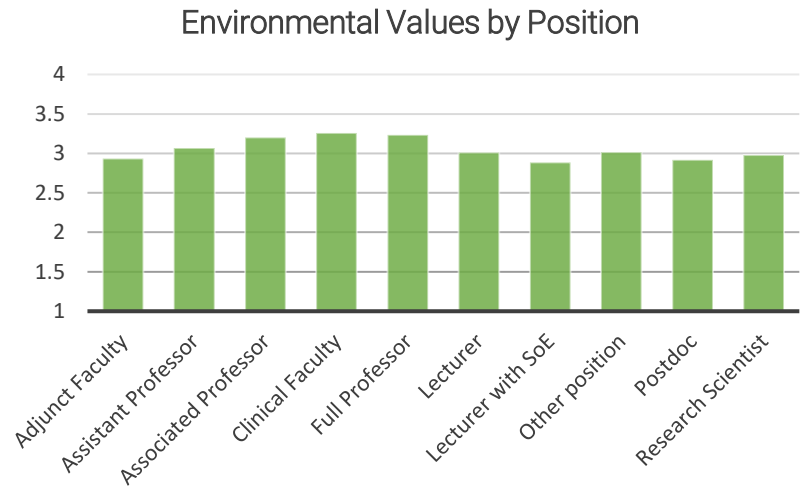

Figure 59. Faculty survey results: Environmental values by position

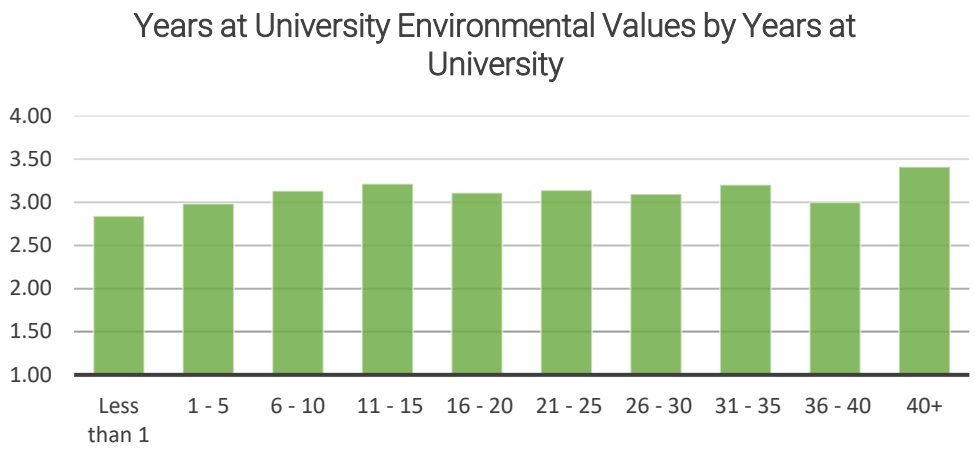

Figure 60. Faculty survey results: Environmental values by years at university

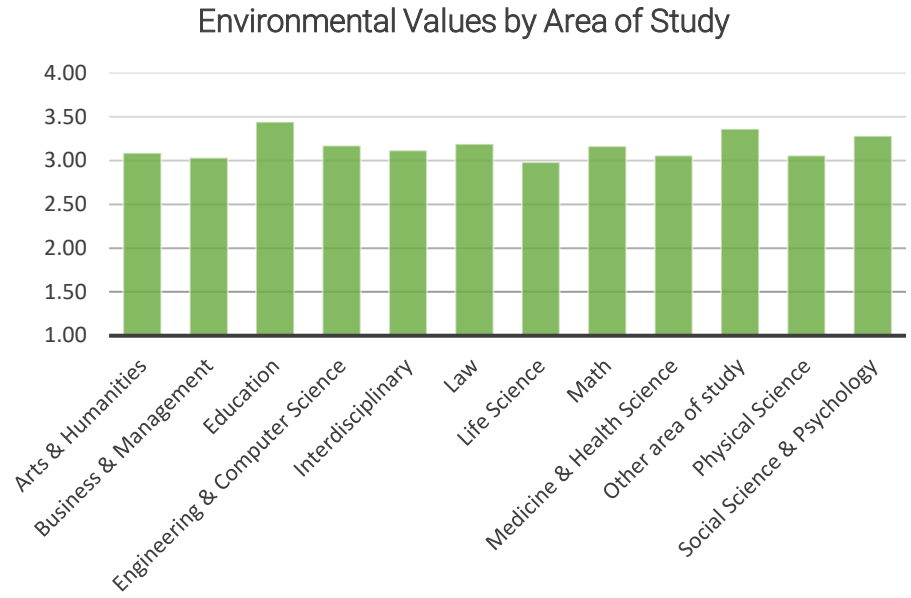

Figure 61. Faculty survey results: Environmental values by area of study

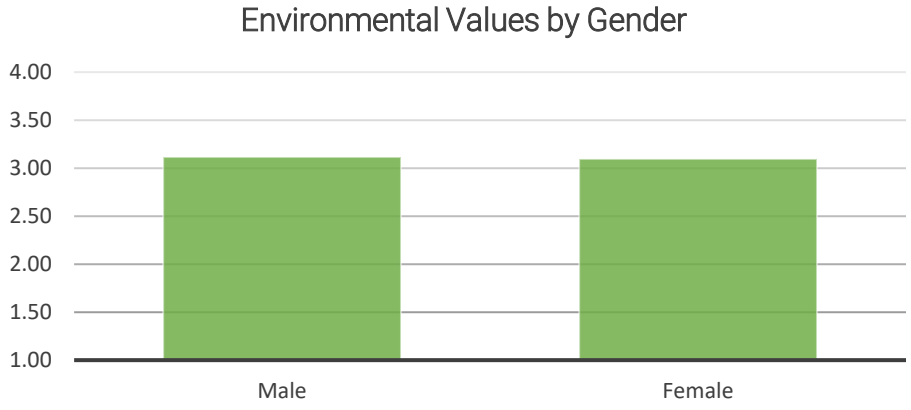

Figure 62. Faculty survey results: Environmental values by gender

Promotion Criteria Figures

Table 16. Faculty survey: Promotion criteria item

Promotion Criteria Item	Scale	M	SD
How much would you favor or oppose including environmental sustainability as one such optional category in merit/promotion cases?	1 (*Strongly oppose*) - 7 (*Strongly favor*)	133.37	47.16

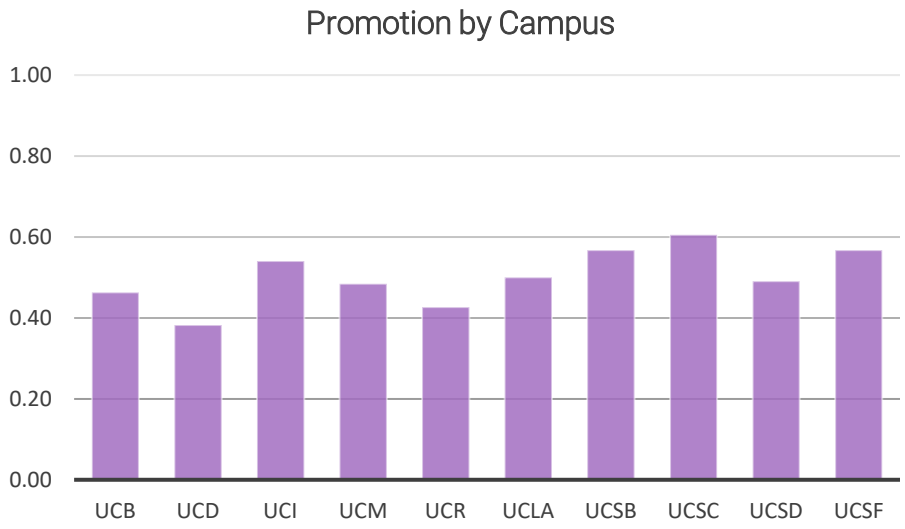

Figure 63. Faculty survey results: Promotion by campus

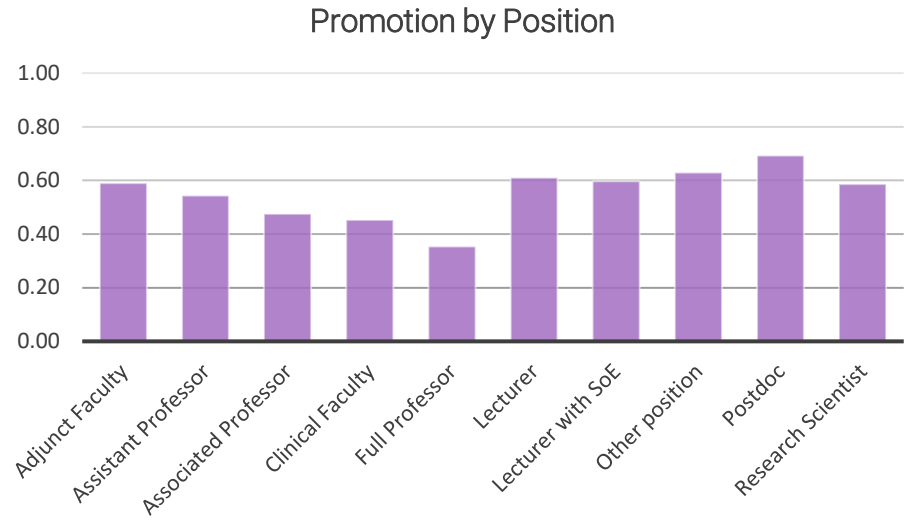

Figure 64. Faculty survey results: Promotion by position

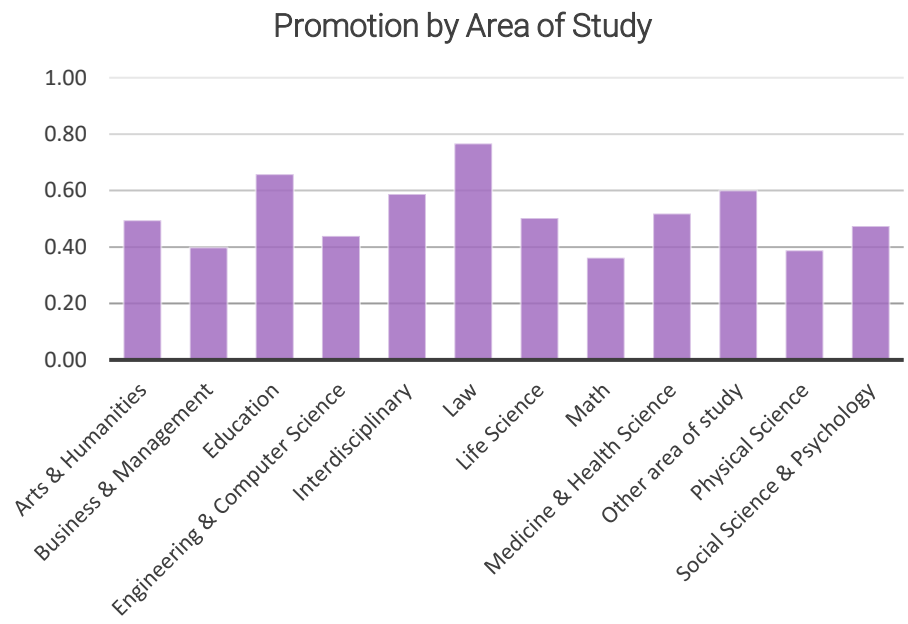

Figure 65. Faculty survey results: Promotion by area of study

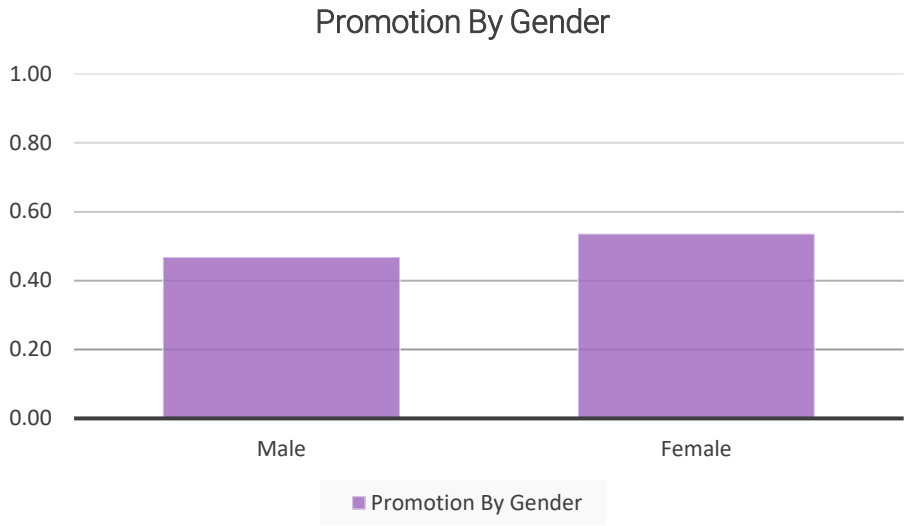

Figure 66. Faculty survey results: Promotion by gender

Leadership Figures

Table 17. Faculty survey: UC leadership item

UC Leadership Item	Scale	M	SD
How important is it for the UC campuses to play a leading role in moving the state of California towards carbon neutrality?	1 (*Not at all important*) - 5 (*Extremely important*)	4.09	1.14

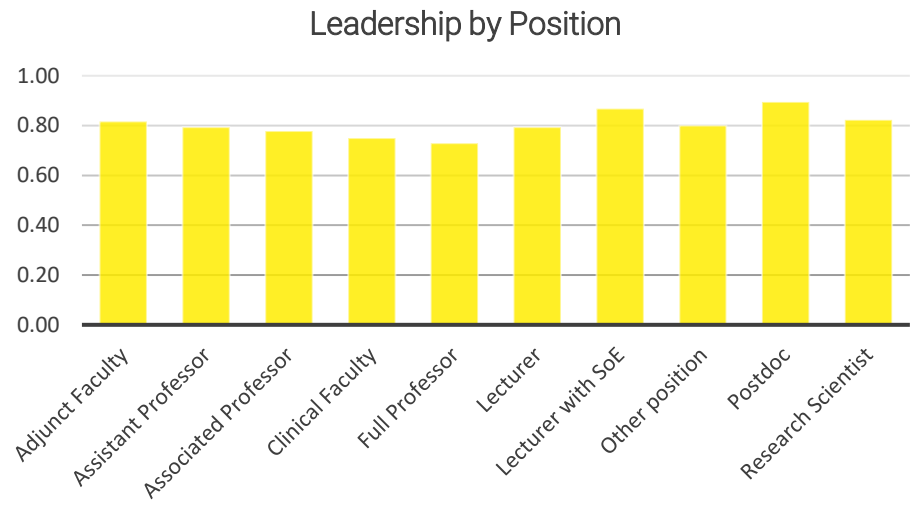

Figure 67. Faculty survey results: Leadership by position

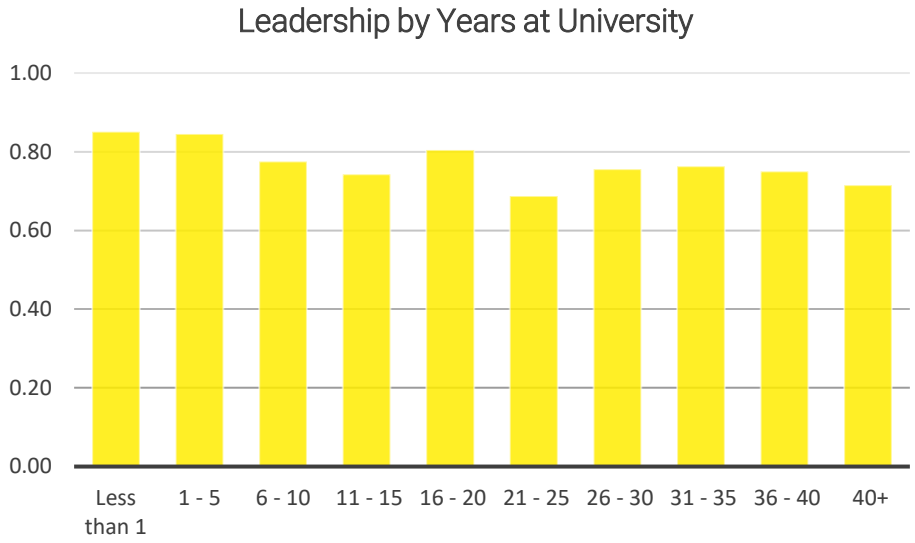

Figure 68. Faculty survey results: Leadership by years at university

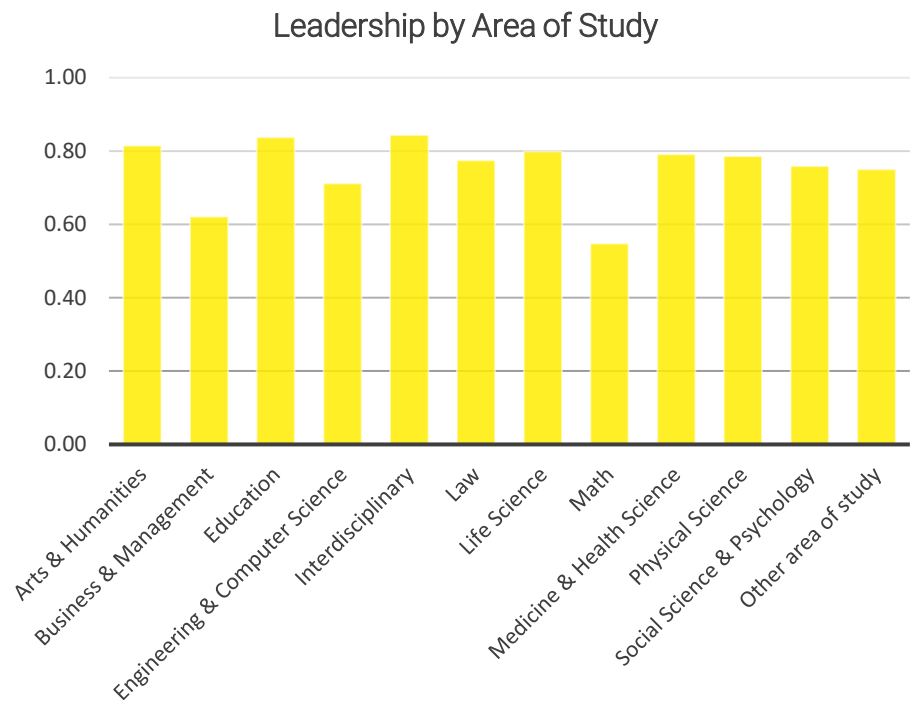

Figure 69. Faculty survey results: Leadership by area of study

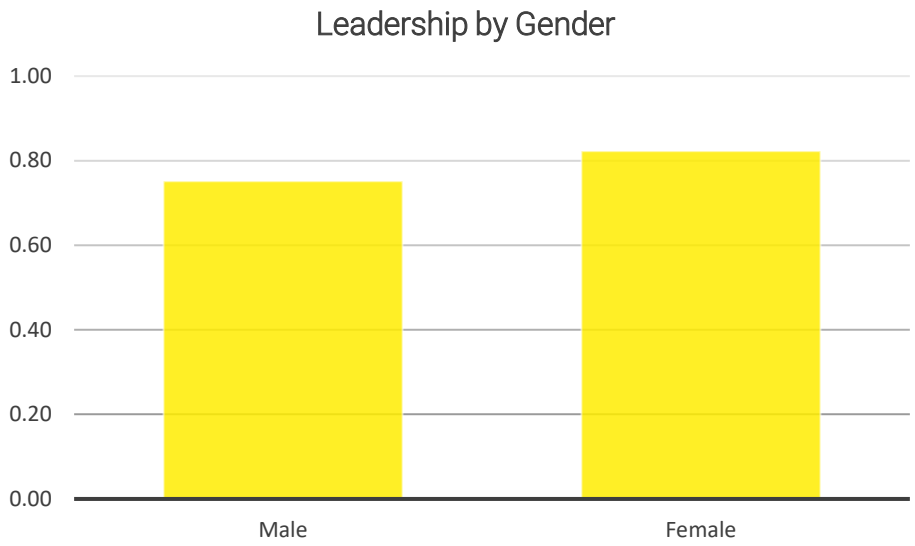

Figure 70. Faculty survey results: Leadership by gender

Faculty Survey Questionnaire

The faculty survey was designed to solicit information across a broad range of topics. To minimize the burden of a very lengthy survey, the survey was divided into 10 blocks, and each participant was randomly assigned to complete 5 of the 10 blocks, as well as the demographics information. In this way, each individual participant received an approximately 10-minute survey. Text of the full survey is included below.

Intro Consent

Thank you in advance for sharing your views on the UC's approach to reducing its carbon footprint! After reading through the Human Subjects form below please click on the red arrow button to consent to participate and to begin the survey.

Approved by the UCSB Human Subjects Committee for use thru: 12/15/2017
PURPOSE: The purpose of the study is to assess individuals' environmental attitudes and beliefs, particularly with respect to the University of California's commitment to achieve zero net carbon emissions from our buildings and fleet by 2025. PROCEDURES: If you decide to participate, we will ask you to complete a survey. This study will take you approximately 10-12 minutes to complete and you will only complete it one time. RISKS: There are no risks associated with participation in this study. BENEFITS: There are no direct benefits associated with participation in this study. CONFIDENTIALITY: The data we collect will not be linked to your identity in any way. Because we do not ask for your name or other information that might uniquely identify you, the responses you provide can never be traced specifically to you. COSTS/PAYMENT: Your participation in this study is completely voluntary. You will not be paid for your participation. RIGHT TO REFUSE OR WITHDRAW: You may refuse to participate and still receive any benefits you would receive if you were not in the study. You may change your mind about being in the study and quit after the study has started. QUESTIONS: If you have any questions about this research project or if you think you may have been injured as a result of your participation, please contact: Hunter Gehlbach at hgehlbach@education.ucsb.eduIf you have any questions regarding your rights and participation as a research subject, please contact the Human Subjects Committee at (805) 893-3807 or hsc@research.ucsb.edu. Or write to the University of California, Human Subjects Committee, Office of Research, Santa Barbara, CA 93106-2050

The UC-system is extremely interested in having all of the UC-campuses reduce their carbon footprint to the point of "carbon neutrality" by the year 2025. Clearly, decisions related to this initiative need faculty input. The goal of this survey is to help us provide that input directly to university leaders. Because faculty time is so valuable we have kept the survey short--it should take most faculty members about 12 minutes at most. At the same time, our committee wanted feedback on many issues. To keep the survey short and cover all content, each faculty member is receiving a subset of all the items we are asking. Because of this structure, it is all the more important that we get your input on each item on the following pages. Also, please do not be concerned if it seems like we have omitted key issues, it is likely that certain key topics were not randomly assigned to be a part of your survey. Conversely, some questions might seem as though they may not be important enough to warrant inclusion--but bear in mind that we have multiple audiences with multiple interests that we are trying to satisfy. Finally, please note that you can only advance forward through the survey. Thanks in advance for your valuable feedback!

Question Block 1

As shown in the graph below, 99% of UC students who responded to the recent "Cool Campus Challenge" survey are at least somewhat concerned about climate change. Imagine that a student you were teaching fell into the 1% that wasn't particularly worried. As an educator, what do you think is the most effective way you could convince the student that s/he needed to be concerned about climate change? Please explain briefly how you might try to convince the student.
Q117 Although most of this survey focuses on sustainability issues for the UC system, in this section we'd like to know a bit about your personal views and behaviors related to environmental issues.
Q118 How often do you talk to others on campus about environmental concerns?

Almost never (1) Once in a while (2) Sometimes (3) Often (4) Almost all the time (5)

Q119 How important is it for people to conserve natural resources whenever possible?
Not at all important (1) Slightly important (2) Somewhat important (3) Quite important (4) Extremely important (5)

Q120 How often do you take actions to support environmental initiatives on campus?
Almost never (1) Once in a while (2) Sometimes (3) Often (4) Almost all the time (5)

Q121 To what extent do you favor or oppose paying more for products so that they can be made in more environmentally-friendly ways?
Strongly oppose (1) Moderately oppose (2) Slightly oppose (3) Neither favor nor oppose (4) Slightly favor (5) Moderately favor (6) Strongly favor (7)

Q130 When people develop land, how important is it for them to consider the rights of wildlife in that area?
Not at all important (1) Slightly important (2) Somewhat important (3) Quite important (4) Extremely important (5)

Q129 How much do you favor or oppose paying more for energy to protect the environment from pollution?
Strongly oppose (1) Moderately oppose (2) Slightly oppose (3) Neither favor nor oppose (4) Slightly favor (5) Moderately favor (6) Strongly favor (7)

Q123 How often do you attempt to conserve water while you are on campus?
Almost never (1) Once in a while (2) Sometimes (3) Often (4) Almost all the time (5)

Q124 How problematic do you think our current treatment of the environment will be for future generations?
Not at all problematic (1) Slightly problematic (2) Somewhat problematic (3) Quite problematic (4) Extremely problematic (5)

Q125 To what extent do you favor or oppose government regulations as a way to protect natural habitats?
Strongly oppose (1) Moderately oppose (2) Slightly oppose (3) Neither favor nor oppose (4) Slightly favor (5) Moderately favor (6) Strongly favor (7)

Q126 How much effort do you put into persuading colleagues to adopt environmentally-friendly practices?
Almost no effort (1) A little bit of effort (2) Some effort (3) Quite a bit of effort (4) A tremendous amount of effort (5)

Q127 How much, if at all, are humans mistreating the environment?
Not mistreating at all (1) Mistreating a little bit (2) Mistreating some (3) Mistreating quite a bit (4) Mistreating a great deal (5)

Q128 When you make purchases for your job, how important are environmental considerations in the purchasing decision?
Not at all important (1) Slightly important (2) Somewhat important (3) Quite important (4) Extremely important (5)

Question Block 2

Like most faculty, climate scientists have typically spent 5 or more years studying with experts in the field to get a doctorate and often continue on for additional training. Among this population of educated climate experts, over 97% believe that climate change is happening and is happening because of human activity. By contrast, among the general public (whose formal science education typically stops at the end of high school), only 55% of people believe that climate change is happening and is happening because of human activity. With this information in mind, please answer the following questions to give us a sense of how much of a problem you perceive climate change to be for your university.

ClimProb1 Some people think that problems related to climate change will be broad--extending to almost all aspects of life; others think that these problems will be narrow--affecting only a couple aspects of life. For your university, how broad or narrow do you think the effects of climate change will be?
[slider bar]

ClimProb2 Some people think that problems related to climate change will be severe; others think that these problems will be mild. For your university, how severe or mild do you think the effects of climate change will be?
[slider bar]

ClimProb3 Some people think that problems related to climate change will need to be addressed immediately; others think that there is plenty of time to address these problems. How urgently do you think your university needs to address the effects of climate change?

[slider bar]

ClimProb4 When do you think global warming will start to harm faculty in the UC system?

They are being harmed right now (1) In 10 years (2) In 25 years (3) In 50 years (4) In 100 years (5) Never (6)

ClimProb5 How worried are you about global warming?

Not at all worried (1) Not very worried (2) Somewhat worried (3) Very worried (4)

ClimProb6 How much do you think global warming will harm people in the United States?

Not at all (1) Only a little (2) A moderate amount (3) A great deal (4) (5) I don't know (6)

Question Block 3 [open ended questions]

Q132 What is the single most important consideration your university should weigh in trying to reduce its carbon footprint?

Q133 What is the most important action for your university to take to reduce its carbon footprint?

Q134 What is your biggest concern related to your university trying to minimize its carbon footprint?

Q135 Which knowledgeable individuals on your campus should your university seek guidance from as it tries to reduce its carbon footprint?

Q136 What type of incentive do you think would be most effective in getting faculty to reduce their on-campus carbon footprint?

Q173 Please describe how, if at all, campus collaborations on sustainability issues happen on your campus.

Q174 Who do you think should bear primary responsibility for reducing the carbon footprint on your campus and why?

Question Block 4

Q139 One way to pay for converting from our current energy sources to carbon neutral sources is through a "sustainability fund." In this approach, each university within the UC system would pay into the fund based on their carbon footprint. This fund could then be used to pay for more sustainable energy (such as installing solar panels or paying for biofuel) or to offset the use of carbon in some other way (e.g., perhaps by supporting a wind farm in another part of the country). There are many ways to set up such a system and we'd like to learn more about your opinions regarding a hypothetical sustainability fund. There are no current plans for such a fund in the UC-system, although they do exist at some other universities. Please respond to each item to give us a sense of how you would feel about different approaches to creating such a fund at your university.

Q189 Make payments into the fund proportional so that the largest energy users on your campus pay the most to the fund.

Strongly oppose (1) Moderately oppose (2) Slightly oppose (3) Neither favor nor oppose (4) Slightly favor (5) Moderately favor (6) Strongly favor (7)

Q190 Split the sustainability fund payments evenly between all members of the campus (regardless of energy consumption)

Strongly oppose (1) Moderately oppose (2) Slightly oppose (3) Neither favor nor oppose (4) Slightly favor (5) Moderately favor (6) Strongly favor (7)

Q191 Pay for the fund by raising student fees.

Strongly oppose (1) Moderately oppose (2) Slightly oppose (3) Neither favor nor oppose (4) Slightly favor (5) Moderately favor (6) Strongly favor (7)

Q192 Base the sustainability fund payments on how much space is taken up by faculty's offices and labs.

Strongly oppose (1) Moderately oppose (2) Slightly oppose (3) Neither favor nor oppose (4) Slightly favor (5) Moderately favor (6) Strongly favor (7)

Q193 Pay for the sustainability fund through "indirect costs" from grants given to your university.

Strongly oppose (1) Moderately oppose (2) Slightly oppose (3) Neither favor nor oppose (4) Slightly favor (5) Moderately favor (6) Strongly favor (7)

Q194 Allow certain campus units to pay other campus units to consume less carbon so that the original units can claim carbon footprint reductions.

Strongly oppose (1) Moderately oppose (2) Slightly oppose (3) Neither favor nor oppose (4) Slightly favor (5) Moderately favor (6) Strongly favor (7)

Q195 Facilities managers should regulate energy use by providing incentives for carbon footprint reductions.

Strongly oppose (1) Moderately oppose (2) Slightly oppose (3) Neither favor nor oppose (4) Slightly favor (5) Moderately favor (6) Strongly favor (7)

Q141 One way to pay for converting from our current energy sources to carbon neutral sources is through a "carbon tax." In this approach, each university within the UC system would pay into an account based on their carbon footprint. This account could then be used to pay for more sustainable energy (such as installing solar panels or paying for biofuel) or to offset the use of carbon in some other way (e.g., perhaps by supporting a wind farm in another part of the country). There are many ways to set up such a system and we'd like to learn more about your opinions regarding a hypothetical carbon tax. There are no current plans for such a tax in the UC-system, although they do exist at some other universities. Please respond to each item to give us a sense of how you would feel about different approaches to taxing carbon at your university.

Q182 Make the tax proportional so that the largest energy users on your campus pay the most tax.

Strongly oppose (1) Moderately oppose (2) Slightly oppose (3) Neither favor nor oppose (4) Slightly favor (5) Moderately favor (6) Strongly favor (7)

Q183 Split the tax evenly between all members of the campus (regardless of energy consumption)

Strongly oppose (1) Moderately oppose (2) Slightly oppose (3) Neither favor nor oppose (4) Slightly favor (5) Moderately favor (6) Strongly favor (7)

Q184 Pay for the carbon tax by raising student fees.

Strongly oppose (1) Moderately oppose (2) Slightly oppose (3) Neither favor nor oppose (4) Slightly favor (5) Moderately favor (6) Strongly favor (7)

Q185 Base the carbon tax on how much space is taken up by faculty's offices and labs.

Strongly oppose (1) Moderately oppose (2) Slightly oppose (3) Neither favor nor oppose (4) Slightly favor (5) Moderately favor (6) Strongly favor (7)

Q187 Pay for the carbon tax through "indirect costs" from grants given to your university.

Strongly oppose (1) Moderately oppose (2) Slightly oppose (3) Neither favor nor oppose (4) Slightly favor (5) Moderately favor (6) Strongly favor (7)

Q186 Allow certain campus units to pay other campus units to consume less carbon so that the original units can claim carbon footprint reductions.

Strongly oppose (1) Moderately oppose (2) Slightly oppose (3) Neither favor nor oppose (4) Slightly favor (5) Moderately favor (6) Strongly favor (7)

Q188 Facilities managers should regulate energy use by providing incentives for carbon footprint reductions.

Strongly oppose (1) Moderately oppose (2) Slightly oppose (3) Neither favor nor oppose (4) Slightly favor (5) Moderately favor (6) Strongly favor (7)

Question Block 5

Q143 The UC-system has to manage a complex budget to meet multiple priorities. To provide each campus with more sustainable sources of energy would require additional initial investments in new energy sources. Consequently, less funding would be available for other priorities. Currently, the UC system spends a bit less than 2% of its overall budget on energy generation and purchased energy.

Q144 The UC-system has to manage a complex budget to meet multiple priorities. To provide each campus with more sustainable sources of energy would require additional initial investments in new energy sources. Consequently, less funding would be available for other priorities.

Q145 Please move the slider below to indicate how much funding should be allocated to more sustainable sources of energy at your campus. Relative to the current amount being spent, what percentage do you think your campus should spend in the future.

[slider bar]

Question Block 6

Please describe a time when you were part of a group that helped make a change in a community. No example is too small--we are interested in all the ways communities might change.

[open ended question]

Please note one way in which this group's action could have led to a larger impact beyond the community.
[open ended question]
Please answer the following items so that we can get a better sense of your perceptions of the UC faculty's ability help the UC system become carbon neutral in on-campus operations by 2025.
CollectEff1 How optimistic or pessimistic are you that the campus operations across the UC-system can become carbon neutral by 2025?
Very pessimistic (1) Moderately pessimistic (2) Slightly pessimistic (3) Neither pessimistic nor optimistic (4) Slightly optimistic (5) Moderately optimistic (6) Very optimistic (7)
CollectEff2 How confident are you that the other UC campuses will do their fair share to achieve the goal of carbon neutrality by 2025?
Not at all confident (1) Slightly confident (2) Somewhat confident (3) Quite confident (4) Extremely confident (5)
CollectEff3 How much influence do the faculty have in helping the UC-system become carbon neutral?
Almost no influence (1) A small influence (2) Some influence (3) Quite a bit of influence (4) A great deal of influence (5)
CollectEff4 In the next few years, how effective do you think the UC community will be in addressing challenging environmental problems?
Not at all effective (1) Slightly effective (2) Somewhat effective (3) Quite effective (4) Extremely effective (5)
Q199 How confident are you that UC Office of the President will do their fair share to achieve the goal of carbon neutrality by 2025?
Not at all confident (1) Slightly confident (2) Somewhat confident (3) Quite confident (4) Extremely confident (5)

Question Block 7

Q148 Many people think climate change matters because it affects lots of other issues. As a result, faculty might feel that the UC-system should try to address climate change for different reasons. For example, from an equity perspective, some might think the UC should address climate change because negative environmental consequences will disproportionately affect the least wealthy and/or members of minority groups. From a leadership perspective, some might think that the UC should address climate change to reinforce its status as a role model within the state of California and beyond. Please list the first idea that comes to your mind as a positive outcome of the UC-system addressing climate change proactively.
[open ended question]
Q149 As members of the UC-system, all faculty share several common values. Naturally, different individuals prioritize these values differently. Please tell us how you prioritize the following set of values for the UC-system as a whole by ranking these items such that 1 = the most important priority and 4 = the least important priority.
_____ Attaining and maintaining diversity across multiple populations on our campuses (1)
_____ Providing an affordable education for students (2)
_____ Eliminating our universities' negative environmental impacts as much as possible (3)
_____ Conducting research that benefits society (4)

Question Block 8

Q150 At UC we value infusing diversity into multiple aspects of campus life because it affects all of us. We care enough about diversity that it has become an informal category in merit and promotion cases for faculty. Similarly, what happens to our climate affects everyone. However, currently it is not a criteria for evaluation in our merit and promotion system.
Q151 Imagine that a new optional category in merit/promotion discussions (alongside the mandatory categories of scholarship, teaching, professional activities, and service) was being proposed in the UC-system. Faculty who demonstrate excellence in this category could be helped; but people without excellence in this category would NOT be penalized. How much would you favor or oppose including environmental sustainability as one such optional category in merit/promotion cases?
Strongly oppose (1) Moderately oppose (2) Slightly oppose (3) Neither favor nor oppose (4) Slightly favor (5) Moderately favor (6) Strongly favor (7)

Q209 If you have other comments/thoughts/reactions regarding this issue, please feel free to let us know using the space below:

[open ended question]

Question Block 9

Q153 As the UC-system attempts to go carbon neutral by 2025, a number of roadblocks might stand in the way. Please rate each of the following potential barriers in terms of how problematic you anticipate each one might be:

Q176 The problem is too large to surmount.

Will not be a barrier at all (1) A small barrier (2) A moderate barrier (3) A pretty large barrier (4) An extremely large barrier (5)

Q177 Faculty will think their efforts are too small to make a difference.

Will not be a barrier at all (1) A small barrier (2) A moderate barrier (3) A pretty large barrier (4) An extremely large barrier (5)

Q178 Faculty won't get invested in the initiative.

Will not be a barrier at all (1) A small barrier (2) A moderate barrier (3) A pretty large barrier (4) An extremely large barrier (5)

Q179 The lack of funding for the initiative.

Will not be a barrier at all (1) A small barrier (2) A moderate barrier (3) A pretty large barrier (4) An extremely large barrier (5)

Q180 Making the needed changes by 2025 is unrealistically soon.

Will not be a barrier at all (1) A small barrier (2) A moderate barrier (3) A pretty large barrier (4) An extremely large barrier (5)

Q181 Faculty will resist the personal sacrifices they may need to make.

Will not be a barrier at all (1) A small barrier (2) A moderate barrier (3) A pretty large barrier (4) An extremely large barrier (5)

Q155 How important is it for the UC campuses to play a leading role in moving the state of California towards carbon neutrality?

Not at all important (1) Slightly important (2) Somewhat important (3) Quite important (4) Extremely important (5)

Question Block 10

Q200 New energy policies within the UC system might take any number of approaches. To what degree would you support or oppose adoption of the following approaches on your campus?

Q201 INVEST IN ENERGY EFFICIENCY: By increasing the energy efficiency of existing buildings your campus would use the saved costs to fund other renewable energy programs.

Strongly oppose (1) Moderately oppose (2) Slightly oppose (3) Neither favor nor oppose (4) Slightly favor (5) Moderately favor (6) Strongly favor (7)

Q202 GENERATE RENEWABLE ENERGY ON CAMPUS: Your campus contracts with companies to install renewable energy generation technologies (e.g., solar, wind, bio-gas) and then purchases the energy generated from those companies.

Strongly oppose (1) Moderately oppose (2) Slightly oppose (3) Neither favor nor oppose (4) Slightly favor (5) Moderately favor (6) Strongly favor (7)

Q203 PURCHASE ENERGY FROM UC-MANAGED RENEWABLE PROJECTS: Your campus purchases energy generated at large-scale renewable energy facilities (e.g., solar, wind, biogas) established through agreements between companies and the UC Office of the President. This renewable energy is delivered to campuses through existing utility grids.

Strongly oppose (1) Moderately oppose (2) Slightly oppose (3) Neither favor nor oppose (4) Slightly favor (5) Moderately favor (6) Strongly favor (7)

Q204 PURCHASE RENEWABLE ENERGY: Your campus pays a premium to purchase renewable electricity from the utility grid.

Strongly oppose (1) Moderately oppose (2) Slightly oppose (3) Neither favor nor oppose (4) Slightly favor (5) Moderately favor (6) Strongly favor (7)

Q205 INCENTIVIZE BEHAVIOR CHANGES: Your campus funds programs to incentivize members of the campus community to reduce energy demand by changing their behaviors.
Strongly oppose (1) Moderately oppose (2) Slightly oppose (3) Neither favor nor oppose (4) Slightly favor (5) Moderately favor (6) Strongly favor (7)
Q206 PURCHASE CARBON OFFSETS: Your campus purchases credits to offset their emissions (by paying others to pollute less or to capture carbon).
Strongly oppose (1) Moderately oppose (2) Slightly oppose (3) Neither favor nor oppose (4) Slightly favor (5) Moderately favor (6) Strongly favor (7)

Demographics
Thank you so much for your thoughtful responses! Just a few finals questions.
Q156 Which campus are you primarily affiliated with currently?
UC Berkeley (1) UC Davis (2) UC Irvine (3) UCLA (4) UC Merced (5) UC Riverside (6) UC San Diego (7) UC San Francisco (8) UC Santa Barbara (9) UC Santa Cruz (10)
Gender: What is your gender?
Female (1) Male (2) Transgender (3) Other (4) _____
Q175 What year were you born?
Dropdown menu range: 1900-2000
Political Orientation: Generally speaking, how would you classify your political orientation?
Very liberal (1) Somewhat liberal (2) Slightly liberal (3) Moderate (4) Slightly conservative (5) Somewhat conservative (6) Very conservative (8)
Race_Ethnicity :Please select each race/ethnicity that best describes you. (Please select any and all that apply. If you would like, feel free to use the space to the right to provide a more accurate description.)
Asian/Asian American (1) Black/African American (2) Hispanic/Hispanic American (3) Middle Eastern/Arab American (4) Native Alaskan/American Indian (5) Pacific Islander/Native Hawaiian (6) White/European American (7) Latino/a/x (8) Other or elaborating on other identity: (9) _____
Language: What was the primary language you spoke with your family when you were growing up?
Arabic (1) Chinese (2) English (3) French (4) German (5) Korean (6) Russian (7) Spanish (8) Tagalog (9) Vietnamese (10) Other, please specify: (11) _____
Q158 Please mark which rank/title best describes your current position:
Adjunct Faculty (1) Assistant Professor (2) Associate Professor (5) Clinical Faculty (3) Full Professor (4) Lecturer (6) Lecturer with Security of Employment (7) Post-doctoral Fellow (8) Research Scientist (9) Other; please specify: (10) _____
Q159 Which of the following broad domains most accurately describes your primary area of study?
Arts and Humanities (1) Business and Management (2) Education (3) Engineering and Computer Science (4) Interdisciplinary (5) Law (6) Life Sciences (7) Math (8) Medicine and Health Sciences (9) Physical Sciences (10) Social Sciences and Psychology (11) Other, please specify: (12) _____
Q207 For how many years have you worked for the University of California system?
Less than 1 year (1) 1 - 5 years (2) 6 - 10 years (3) 11 - 15 years (4) 16 - 20 years (5) 21 - 25 years (6) 26 - 30 years (7) 31 - 35 years (8) 36 - 40 years (9) 41 - 45 years (10) 46 - 50 years (11) More than 50 years (12)

Final Comments
Do you have any additional comments or final feedback to help us?
[open ended question]

6.1.3. Faculty Interviews

Our group interviewed 20 ladder-rank faculty from across all of the UC campuses, representing a diversity of academic fields (e.g. humanities, social sciences, physical sciences, engineering), including those who were involved in the academic senate. All respondents were eager to share their thoughts, even those who had no prior knowledge of the CNI. The purpose of the interviews was to gain more in-depth knowledge on faculty perceptions of campus decision-making processes, including how they would like to be engaged with initiatives like the CNI, their impressions of the CNI generally, and their experience with campus

operations. The themes from the interviews are grouped below into decision-making, personal experience with campus operations, campus/UC role on climate and energy, and perceptions of the CNI.

Faculty respondents also felt that this group should disseminate the findings of the report widely, encourage campuses to share their work on carbon neutrality more, publish this work in a wider literature, and specifically engage faculty on the CNI more actively (and provide more information).

Decision-making

Experience with Decision-making

We asked faculty whether they had experience with decision-making either at their campus or at the UC-level. Generally, the individuals we spoke with had many different levels of experience with decision-making, including departmental and campus committees or UC-wide programs or committees. Faculty either reported that they had too many experiences to count, or that they had almost no experience at all. Of those faculty who said they had lots of experience with decision making on campus or at the UC-level, they felt that even though it may seem as if they have control, they in fact have less control over campus processes than one might think. (As an aside, UCM provided an interesting contrast with other campuses, since they don't have a traditional "department" structure.)

How Faculty Respondents Characterize Decision-making

Faculty reported that shared governance was the most common model, though some emphasized that shared governance is more of an ideal and is not always enacted in practice. Rather, only a few end up making decisions, and in some cases certain faculty ended up being less involved. Of the groups that exhibited a shared governance structure, decisions were consensus-based, though the process is rather slow and deliberate. At the same time, faculty described "parallel paths" to decision-making, between the more autonomous top-down decision making and the complementary, collaborative decision-making that occurs in departments and committees.

Qualities of Decision-making That Works

In general, most faculty emphasized the need to incentivize and garner faculty input for campus processes. In addition, the decision process should be transparent and information regarding the outcomes clearly disseminated. To achieve this, good leadership is crucial to success. Faculty also had thoughts on what made for quality input, and noted that there is a clear difference between productively working together and just having meetings. To achieve the former, faculty noted the importance of someone actively promoting engagement and support from faculty, and also using a consultation-based approach. With the consultation approach, there might not be consensus from all the faculty, but it's likely the best approach for some issues because not every topic needs to be "micromanaged," as some put it. Most all faculty noted that if they were to be included in a process, their effort should be incorporated, and not wasted.

Other characteristics of successful decision-making included open dialogue; stable, long-term, and predictable involvement; and strong attempts to motivate involvement by removing conflicts of interest and representing the issue as relevant to faculty. Faculty also noted several typical characteristics of good group committee work. These include actively promoting collegiality, having a clear agenda, making sure everyone uses the same "language," demonstrating the benefits of being involved, being transparent with information and disseminating it widely, and engaging with the wider campus community, such as students and staff, whenever possible. Faculty noted that town halls could be included in the process, since it would open them up to different points of view.

Decision-making That Doesn't Work

Faculty also highlighted aspects of decision-making processes that didn't work, in contrast to those that do. In general, most all faculty found that the following hamper productive input from faculty in decision-making processes:

- Lack of follow-through. Faculty are asked to weigh in, but then told that their preferences wouldn't be taken into account.

- Being overburdened with involvement but experiencing no payoff. Faculty are required to attend meetings and fill out paperwork, but then their feedback is ignored.
- Top-down mandates. These result in lack of confidence in administration and the faculty's role in campus decision-making.
- Inequity. Different campus divisions are impacted differently by policy changes, and inequalities in effects are not accounted for.
- Proliferating bureaucracy. A timeline disconnect between faculty and administration.
- Over-reliance on surveys, with no room for comment.

Experience with UCOP and Decision-making

In general, most spoke of positive experiences with UCOP, if any. They found the exchange professional, focused, entrepreneurial, and generally smooth, efficient, and clear. However, they also mentioned that this level of positive communication was not necessarily true for their interactions with other UC campuses.

Personal Experience with Campus Operations

Types of Experiences

Almost all faculty spoke of having some experience with heating and cooling, electricity, technology, and parking. A subset had specific experiences related to renovations or new building construction. Most seemed to reflect on negative experiences as opposed to positive. The negative responses included a belief that there was going to be a cost to the faculty, through inconvenience, loss of comfort, electrical interruptions, and interference that would slow down research. Additionally, they felt that campus operations were inefficient, there was a backlog of projects, when maintenance or construction work does happen it hinders their own work, that there were so many things that needed updating it was important to "pick your battles," and that there wasn't a clear pathway for changes or reform in the process. While some were sympathetic toward the goal of energy efficiency, they felt that it wouldn't be worth it because it would hinder work and teaching performance. They also expressed the opinion that energy efficiency wasn't aligned with the mission of teaching or research.

The positive responses toward campus operations showed that they had a general sympathy for the cause of improving energy efficiency and mitigating climate change, they saw lots of examples of campus operations making positive changes on campus, and experienced no major impacts to research and teaching, and thought that different stakeholders' interests had been adequately accounted for in new building design.

Interactions with Campus Facilities

Faculty also commented on some of their experiences with facilities staff, whom they perceived to be capable . However, faculty generally felt there was a lack of consultation with those who were impacted by their work, that facilities units operated rather independently from other parts of campus (and that this could be good or bad), and that facilities units were generally perceived to be unorganized, slow, and inefficient. Faculty also noted that academic personnel can be more ideal about changes, while facilities personnel tended to be more practical, which led to workplace culture differences. They offered that students could, perhaps somehow, be a conduit between campus operations and faculty. Faculty also felt that campus facilities units were generally quite ad-hoc, with no clear primary contact. They also couldn't tell whether changes to the building (such as changes in heating or cooling) were done deliberately, or whether they were due to poor building management. For those buildings that did report energy savings, they doubted whether they were correct, and thought that at times that energy savings must be overstated.

Campus Role in Addressing Climate Change

Should Campuses Play a Role?

In general, faculty felt that campuses should play a role in addressing climate change because 1) it's the right thing to do; 2) it's representative of "who we are" and 3) universities are uniquely equipped to deal with these issues. Regarding the moral obligation, faculty stated that if the sciences that study climate change

and don't act, then who will? Faculty also felt that acting on climate change aligned with their values, and was more enlightened or forward-thinking. Faculty also seemed to believe that universities were well positioned to take a lead on climate change, as they felt they could do things that politicians couldn't. They also expressed the thought universities had the resources and were in a better position to act because they were not profit driven. They also saw UC action on climate change as supporting broader state policy, as well as being timely given current the political climate.

The Ideal Role of UC Regarding Climate Change

Faculty felt that it was critical for the UC to take a leadership role in the area of climate change mitigation, including intellectual, technological/research, and educational (curriculum-based solutions) leadership. They felt that UC should model "best practices" and "walk the talk," given what campus research indicates about climate change. They suggested leading by action through a concept such as "living laboratories," whereby campuses test best strategies for reducing emissions, and that they do as much as they can while showcasing campus strengths. They also noted it was important to communicate about the science and issues related to climate change to the public, and to actively communicate outside of the academic arena, engage the community, make data freely available, and provide training in best practices for mitigation. A few faculty mentioned that action should relate to issues that are specifically important to UC, and that UC should be apolitical, though these sentiments were not shared widely.

Why Campuses Should Not Play a Role

Few felt that UC should no play a role, but those who did noted that it wasn't the place of the university to try and solve global problems, that it shouldn't be made a campus goal. Others thought it would be too expensive to engage in this type of leading by example, that it doesn't align with the mission of the university, or that it places an undue burden on faculty and others. A few noted that it was too politicized for UC to get involved.

Perceptions of the Carbon Neutrality Initiative

Many of the faculty stated a lack of knowledge or expertise related to the CNI. They generally believed this to stem from limited information or communication regarding the topic. Some then indicated that this suggests the CNI is not a priority to the UC or the campuses.

Support

Generally most expressed clear support for the CNI. Very few were outright negative about the policy; however, they did note that they don't necessarily know enough to comment on how the CNI might be put into practice.

How to Enact the CNI

Some faculty had the technical expertise to talk about specific solutions related to energy efficiency, technology, renewables, and behavior change. For others who were unfamiliar, they hoped for a strategy that engages the campus community and develops collective solutions. These faculty outlined several ideas to better integrate the wider campus into decision-making around the CNI, including a model to aggregate and potentially enact collective solutions. This would involve connecting to other initiatives (such as the water-energy nexus), speaking more with students, staff, and faculty, and looking for local solutions outside of the campus as well. They also talked broadly about wanting more collaboration between facilities, faculty, administrative staff, engineers, and architects—hopefully leading to real solutions and technologies. They suggested a proposal process for new campus projects, working through existing committees (not new ones), relying on good ideas from the community, and finding ways to make best use of peoples' limited time.

Some of the solutions that were brought up included more energy efficiency, using best technologies, stopping blaming individuals for small (insignificant) behaviors, renewables, longer time horizons for capital investments, infrastructure improvements, divestment, and better internal communication.

Concerns, Hesitations, or Objections

Many expressed concerns regarding the practicality of the CNI and potential costs and tradeoffs

"it's a pipe dream, it won't happen." Regarding the practicality of the CNI, faculty outlined the difficulty arising from an unrealistic time frame, challenges with changing behaviors, the fact that it's too ambitious, and the fact that some solutions don't seem to align with the larger goal (e.g. how does campus gardening fight climate change?). Many also suggested that the CNI goal should be part of a more holistic goal to be more sustainable, and they questioned why Scope 3 emissions were not included, as behavior change seems to be so critical to engagement. They also mentioned several tradeoffs, including mission misalignment between the UC and the CNI (regarding teaching and research), and thought that doing this could present legislative concerns. Other hesitations had to do with cost, including the notion that the state should just be in charge of the issue, not UC.

UCOP and the CNI

For those who did have comments on the role of UCOP, they seemed somewhat conflicted, emphasizing that the relationship isn't always beneficial to the campus. Most feel as though UCOP needs to bring money to the table to assist campuses in reaching the goal. Additionally, they found the role of UCOP to be rather complicated as it stands, as sometimes UCOP isn't clear about what role they are playing and what they want the campuses to do. Of those who had suggestions for UCOP, they thought UCOP should be more involved with campuses finding the best path forward, including helping to identify and address potential problems. They would prefer UCOP to be a facilitator and helper, rather than take a more top-down approach, handing out mandates. Many faculty also suggested that UCOP help with upfront investments, since, if they want anyone to achieve carbon neutrality, there needs to be incentive and financial support. Finally, they suggested that UCOP provide updates on what the campuses are doing, such as providing a dashboard, and be good at keeping data up-to-date and transparent.

Attitudes Toward Offsets

Many tended to think of offsets as paying others, elsewhere, to build up infrastructure to mitigate emissions. There was a mix of support and opposition, with most in the middle, and many hoped that campuses would purchase local offsets—if they purchased offsets at all. There was acknowledgement that offsets could be cost effective, yet there was also a sense that buying offsets felt like cheating. Faculty also felt that offsets were a bit like "paying to pollute," and that they were just passing the problem on to someone else, or relying on someone else to deal with the problem. They saw offsets as a short-term fix.

Those who supported offsets did so because they thought it was cost effective, good to "do good" by investing elsewhere, necessary to meet the deadline (but only if it helps others), and that it was inherent to the process of achieving carbon neutrality. Those who had concerns were worried about where the money would come from to purchase the offsets, and wanted them to only be purchased for the "right reasons," such as offsetting medical centers, not because UC didn't want to work to make the appropriate infrastructure adjustments. Others were concerned that offset programs were profit-driven. Most all, however, felt that it was important to keep money on campus, and that if an offset was purchased, it needed to be local, of high quality, and meet certain standards that align with UC missions.

Faculty Interview Guide

The following questionnaire was used to guide discussions with faculty.

INTRODUCTION

Thank you again for taking the time to speak with us today, we really appreciate it.

Before we get started, I want to let you know a bit more who we are and today's conversation.

We are researchers from UCSB and members of a cross campus collaborative working group sponsored in part by UCOP and the TomKat Foundation. This project is part of a larger effort to understand and document how members of the campus community will be differentially affected by the Carbon Neutrality Initiative.

CNI SPECIFICALLY:

As you saw in our email, part of what we are interested in is any thoughts or impressions you have regarding the Initiative specifically, which we will get to toward the end of the conversation.

EXTRA INFO *[You may have heard about the CNI…. We're interested in any impressions of the Carbon Neutrality Initiative, or the CNI, you may have, which was initiated in 2013 by the UC Office of the President, or UCOP, to help the UC address its climate goals and reduce its carbon footprint. It's completely fine if you don't know much about this initiative. You are not expected to be an expert or even know much about the details.*

So you may be aware that the goal of the CNI is to reach net zero carbon emissions by 2025—and it deals primarily with campus operations. Achieving carbon neutrality requires, on the one hand, reducing carbon emissions, and on the other, taking actions to compensate for, or offset, all remaining emissions. We are interested in any impressions or thoughts you may have about this – and how it could potentially impact you and your work, if at all.]

DECISION-MAKING GENERALLY:

However, we are also hoping to understand more about some of your own experiences with decision-making generally.

EXTRA INFO *[Before we get into talking about the CNI, it would be helpful to understand more about some of your experiences with the UCOP, campus sustainability, and UC-wide initiatives in general.]*

FORMAT:

Regarding format, this is an informal, conversational-style interview, meaning there are no right or wrong responses, and you're not expected to have any particular insight or knowledge about anything we talk about. And as a reminder, your responses will be completely confidential and anonymous.

If at any time you want to ask a question, interrupt, or stop the interview, just let me know. And feel free to bring up any other ideas that come up as we go along, even if you're not sure they're directly related.

As mentioned there are two of us on the call today so that we can take accurate notes regarding this conversation, I hope that is alright. We would also really appreciate recording this conversation in case we miss something, are you okay with this?

Do you have any thoughts or questions before we get started? [note: if they ask about the CNI here feel free to give them the info in italics above] This should take no more than 30 minutes.

INTRO

DECISION-MAKING

1. To get started, we are interested in hearing about your experience with campus decision-making, if any. When you think about decision-making – whether at the departmental, campus, or UC level – what comes to mind for you? This can be related to anything--a specific project, initiative, or something else. prompt in case they are stumped, provide a few examples
    a. Can you take me through an experience you've had with decision-making that was particularly memorable, either positive or negative? *NOTE: If they seem stumped, be ready to offer examples or suggestions. Remember this is not something people have necessarily thought about much.*

ENERGY

1. Ok, thanks, that's really helpful. *[insert REFLECTION – a key part of this method. Reflect back what you heard them share, not necessarily, "what I heard you say" but simply reflect what they told you, then transition]* Now I'd like to transition to climate and energy issues specifically. Can you recall a time when your work was positively or negatively impacted, if at all, by campus operations, energy management, or facilities?
    a. Optional Prompts: What happened? What was outcome? In an ideal world, what would you have wanted to have happen differently?
2. *[REFLECTION before transitioning]* So thinking a little more broadly, I'm curious what may be your take on the role a university could or should have on climate and energy issues. What are your thoughts on this? Anything that comes to mind is ok, even if you're not sure. [potentially, add in context for this, as you don't want them wondering, why does he/she want to know this?]
    a. Alright, so now with respect to the UC or your campus specifically, would you mind describing what for you could be the ideal role the UC or your campus should play in dealing with climate or energy issues, if any? Again I am not looking for technical knowledge or expertise of any kind.

CNI

1. So as promised – let's switch gears to talk about the CNI specifically. When you think about the CNI/UC carbon goals, to achieve net-zero carbon emissions across the UC by 2025, what are the first things that you think of off the top of your head?
2. Can you imagine an ideal scenario for reaching this ambitious goal? What would it look like? Break it down for me.
    a. Potential follow-up: I'm curious, from your perspective, do you think your campus should invest resources to reduce campus emissions even if it might require offsetting emissions that it can't eliminate?

Great, thanks, these insights are extremely helpful. I don't have any more questions—do you have any questions for me?

Many thanks again, and please feel free to reach out with any additional questions, should they arise. Have a great rest of your summer!

6.1.4. Student Survey

A 13-minute student survey was distributed by campus sustainability officers via email and social media available to them in the spring and summer of 2017. The survey invitation in social media consisted of posts similar to the following examples:

- What do you know about UC's Carbon Neutrality Initiative? Take a short survey for a chance to win a $50 gift card [LINK]
- UC students: share your views on UC's efforts to reduce greenhouse gas emissions (+ a chance to win a $50 gift card) [LINK]
- UC students: Your campuses need to know what you think about reducing UC carbon emissions [LINK]

Of the 405 individuals who clicked through the survey link, 320 agreed to participate, and 134 completed the survey. Participation was significantly higher for UC San Diego and UC Merced, very low for UC Santa Cruz, UC Riverside, and UC Davis, and absent from UC Santa Barbara and UC San Francisco*. Relative to the entire UC student body (approximately 238,000 students) the 134 completions amounts to about 0.1%.

The majority of the students surveyed are senior undergraduates (33%) in majors related to environmental sciences/environmental studies (25%) or engineering/computer science (22%). 43% are Asian, 36% Caucasian, and 15% Hispanic or Latino. Our sample is gender-biased, with 66% identifying as female, 34% as male, and 0.7% gender non-conforming. Most consider themselves to be politically liberal (72%) or moderate (15%). Only 5% consider themselves to be conservative, speaking to the liberal tendency of UC students as well as characteristics of those most willing to participate in this survey.

Knowledge and Familiarity

While other aspects of this report point to low familiarity with the CNI, most students surveyed stated that they were at least somewhat familiar with the CNI (72%). Nonetheless, nearly 25% of the students stated that they had never heard of the CNI. While it is not clear precisely where this lack of familiarity is coming from, there is a statistically significant relationship between familiarity and participation in sustainability organizations, with those directly involved in sustainability organizations much more likely to be familiar with the CNI than those who do not participate in sustainability organizations specifically (p-value < 0.05). This would indicate that membership in campus sustainability groups exposes students to information regarding the CNI. Importantly, in this sample, just being a member of any campus organization (not necessarily related to sustainability) appears to expose students to information about the CNI, with those who do participate in organizations more likely to be familiar with the CNI than those who do not (p-value < 0.05). Importantly, only 31% of these students feel as though they know enough about the issue of carbon neutrality to have an informed opinion. When we look at the relationship between CNI familiarity and knowing enough to be informed we find that the two are positively correlated (p-value < 0.05).

Support for UC's Carbon Neutrality Initiative

Among this group of students, support for the CNI and efforts to reduce carbon emissions generally is very high. Over 95% of the students believe it is 'important' or 'very important' for their campuses to reduce carbon emissions as much as possible. When informed of the specific goal of the CNI, again, over 95% of these students express that it is 'important' or 'very important' for their campuses to achieve the carbon

* UCSB students were not directly asked to participate in the survey as they had recently participated in a very similar survey earlier in the academic year. It is not too surprising that UCSF lacked response given the fact that they do not have undergraduate students. While many graduate students took the survey overall, our methods of survey distribution were less effective at reaching students at UCSF.

neutrality goal. This raises the question of where support stems from. In other words, why do students feel this is an important goal?

The top reasons student say carbon neutrality is important include 'it helps address climate change' (97%), 'it can provide local health benefits' (94%), and 'it is important for UC to show leadership on environmental issues' (93%).

Those items that seemed to resonate the least with students include 'it can save my campus money' (69%), 'it will provide a sense of campus pride' (69%), and 'it will involve making progress toward other social justice goals I care about' (74%). To be clear, for many students these ideas do resonate, although generally less than the above.

Support for Different Actions to Reduce Carbon Emissions

The survey included a number of questions related to support for specific campus actions that help reduce carbon emissions, including renewables, energy efficiency, and market-based instruments.

Renewables

In general, respondents support developing on- and off-campus renewable energy and purchasing renewable energy credits (RECs). Nonetheless, there are clear differences in preference. While 78% of students 'strongly like' on-campus renewables, this enthusiasm is reduced to 47% for off-campus renewables, and just 14% for the purchase of RECs. Importantly, students are most unsure of RECs (13%) and more likely to state that they 'strongly dislike' or 'dislike' RECs than the other renewable options. RECs are also the category toward which students are most neutral (25% compared to just 5% for off-campus renewables).

While one would hypothesize support for different renewables to be correlated with one another, this is not the case for RECs. Support for on-campus renewables is positively correlated with support for off-campus renewables, but neither are correlated with support for RECs ($p < 0.05$), suggesting that students do not at all see these as falling under the same umbrella.

Energy Efficiency

In terms of energy efficiency related projects, students most strongly support increasing energy efficiency in existing buildings (75%) and requiring new buildings to be emission-free or meet high sustainability certifications (70%). Comparatively, only 46% of students strongly support requiring the purchase of goods and supplies based on low levels of emissions. Despite these differences in support, all three options are positively correlated with one another ($p < 0.05$).

Market Based Solutions

Compared to renewables and energy efficiency, students are not as supportive of the presented options to help fund carbon neutrality. Approximately 60% of the student 'like' or 'strongly' like the idea of imposing a carbon fee on campus members, only 42% felt similarly toward establishing a student fee, and a number of students expressed that they 'strongly dislike' an additional student fee in particular (10%). In this case, preference toward a carbon fee is positively correlated with preference toward establishing a student fee ($p < 0.05$).

Taken together, students demonstrate the most favorability toward renewables (in particular on campus renewable sources), followed by energy efficiency (especially increasing energy efficiency in current and future buildings). Given the various provided options for reducing carbon emissions, RECs receive the least support. When we look across the three types of solutions we do find some correlations. Support for on-campus renewables is associated with support for all three types of efficiency measures and the use of a carbon tax. Feelings toward off-campus renewables are positively associated with increasing energy efficiency, restrictions on new building requirements, and a carbon fee. Feelings toward RECs are positively associated with feelings toward new building requirements and the use of a carbon tax. Feelings toward new building requirements and imposing a carbon tax are also positively associated. Finally, establishing a

new student fee to help reach carbon neutrality is only correlated with requiring the purchase of goods and supplies with low carbon emissions. All of these described relationships are significant at 0.05.

Tradeoffs

The reality of reaching carbon neutrality presents a number of potential considerations and tradeoffs. We highlighted these with the following statement: "Reaching carbon neutrality requires careful consideration of tradeoffs. This could involve reducing spending for other campus programs or services. While no specific plans have been finalized, there might be, for instance, reductions in building amenities and/or departmental budgets." When presented with these tradeoffs, most students still think carbon neutrality 'definitely' should or 'probably' should be a priority for their campuses (91%). This suggests that students are willing to reduce the budgets of other things they may care about in order to support carbon neutrality projects.

Where we do see support wane is in the case of offsets. When asked 'Would you say it is important for your campus to reach carbon neutrality by 2025, even if it means buying carbon offsets' only 12% of respondents stated 'definitely yes.' Most (42%) specified 'probably yes' with 29% stating 'probably not.' Thus, when students are presented with the reality that offsets might be part of their campus's plan to reach carbon neutrality they are more hesitant in their support. This is emphasized even further when students are asked whether they support the purchase of offsets even if it means investing less in long-term energy efficiency projects and improvements. In this case only 4% of students state 'definitely yes' followed by 22% 'probably yes.' Students were even more likely to state 'probably not' (42%) and 'definitely not' (18%). These findings point to two conclusions: 1) in general students will temper their support for carbon neutrality as long as offsets are on the table; 2) this reaction is likely to depend on how offsets are described and presented.

Additional analysis suggests that support for particular actions (renewables, efficiency, market-based) predicts support for achieving carbon neutrality. Specifically, in the case of tradeoffs, as support for on-campus renewables, off-campus renewables, sustainable purchasing habits, or implementing a carbon tax increases, support for carbon neutrality given potential tradeoffs increases ($p < 0.05$). Interestingly, when considering offsets, we fail to reject the null that there is no relationship between support for particular actions and support for carbon neutrality even in the case of offsets. As shown in Figure 71 when offsets are presented in conflict with energy efficiency, as support for energy efficiency projects on current campus buildings increases, support for carbon neutrality when offsets are presented in contrast to energy efficiency decreases ($p < 0.05$). Given the fact that support for increasing efficiency on campus is so high among these students, there is a particular risk of losing support for the carbon neutrality goal if investment in offsets might conflict with investment in long-term efficiency.

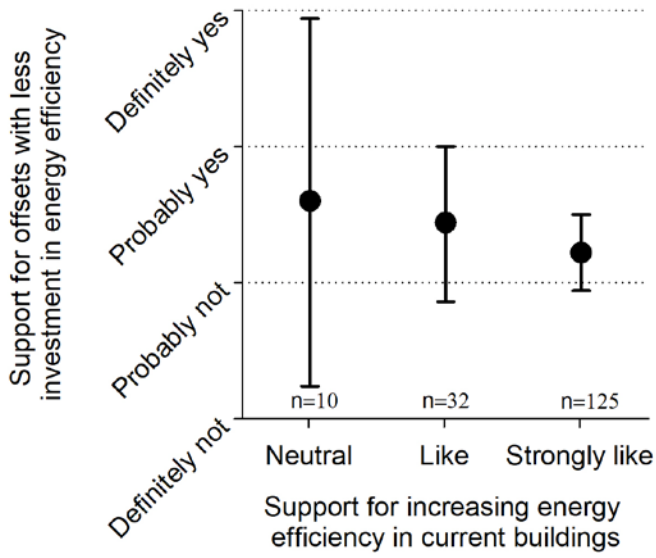

Figure 71. Student survey results: Support for offsets vs. energy efficiency. X-axis: How do you feel about the following campus construction and purchasing strategies? Increase energy efficiency in current buildings. Y-axis: Do you support the purchase of carbon offsets to allow the UC to reach carbon neutrality by 2025, even if it means investing less in long-term energy efficiency projects and improvements?

Action

The students surveyed all show very strong support for other campus issues. Nearly 90% of students find a campus commitment to divestment to be 'important' or 'very important.' In fact, less than 1% of students surveyed find it to be 'not at all important.' Similarly, when considering other UC-wide initiatives (including eco-transportation, water conservation, zero waste, green buildings, and food) the vast majority of students find these to be important or very important. Thus, any project associated with the CNI that potentially conflicts with these other high priority student concerns risks losing support for the CNI.

This is particularly important when we consider how active these students are on campus. Of the 13 campus actions provided in a list to the students, on average respondents indicated participation in nine campus actions (ranging from taking a class focusing on the subject to joining a campus committee). Not a single student in this sample indicated that they are unwilling to take action on carbon neutrality. Students are most willing to turn off electricity/lights and use less heat and air, and take green transit to campus, sign a petition, or talk to their peers about the issue. We are particularly interested in how willingness to take action generally, or particular actions, might be related to support for specific carbon neutrality actions, including divestment and market-based options.

As shown in Figure 72 as participation in campus actions increases so too does support for divestment, with those students who are willing to take the most number of actions on carbon neutrality also being the most likely to strongly support divestment.

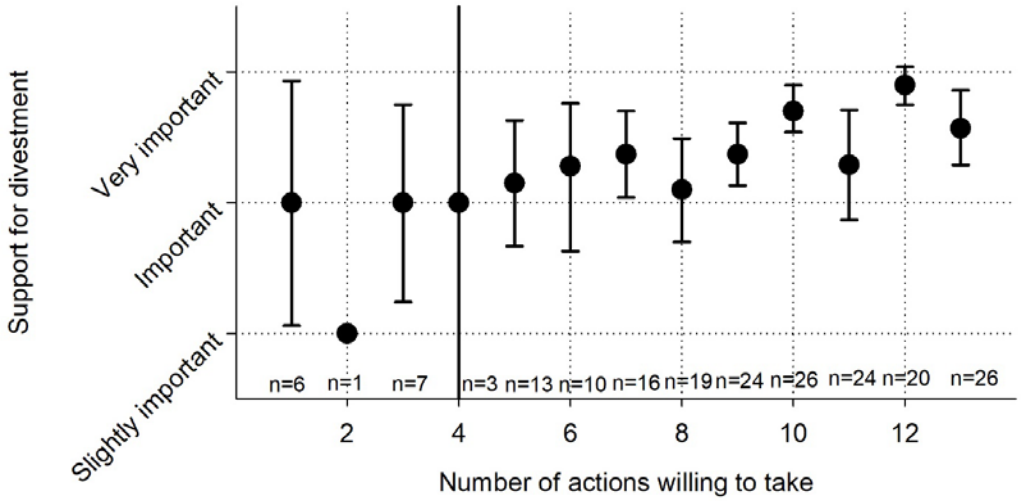

Figure 72. Student survey results: Willingness to take action and support for divestment. X-axis: Which actions would you be willing to take to help achieve carbon neutrality on your campus? (13 listed). Y-axis: How important do you think it is for the UC to divest from fossil fuel companies?

When we consider the relationship between support for a campus carbon tax and action we find that students who are willing to take a number of actions are more likely to support a carbon tax. Also, as shown in Figure 73 in particular those willing to take a hard action (participate in a protest, talk to an administrator, faculty, or staff, or join student government) are the strongest supporters of a carbon tax.

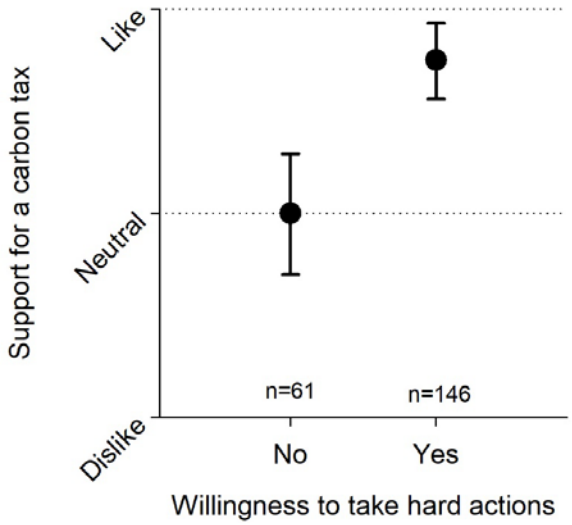

Figure 73. Student survey results: Willingness to participate in a hard action and support for a carbon fee on campus energy users. X-axis: Which actions would you be willing to take to help achieve carbon neutrality on your campus? (13 listed, of which some were classified as hard). Y-axis: How do you feel about potential ways to fund carbon emissions reduction projects on campus? Impose a carbon fee such that the highest campus energy users would pay the largest fee.

While willingness to engage in actions to support the CNI is positively associated with support for a new student fee, this is not a strong or particularly meaningful relationship, with only a slight difference in support for a student fee based on the number of actions one is willing to take. However, when we consider just the difference between those who are or are not willing to take a particularly hard action we find a more

significant difference. On average, those who are willing to engage in protests and other more difficult actions are more likely to support a new student fee to help pay for the costs of carbon neutrality (see Figure 74Figure 74).

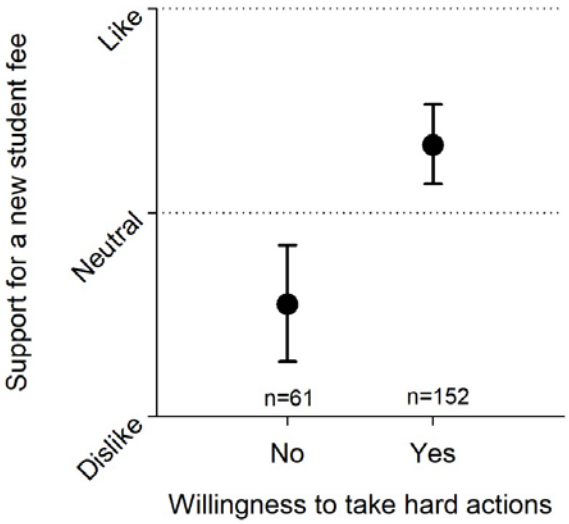

Figure 74. Student survey results: Willingness to take hard actions. X-axis: Which actions would you be willing to take to help achieve carbon neutrality on your campus? (13 listed, of which some were classified as hard). Y-axis: Establish a student fee that would to help fund energy sustainability initiatives on campus (such as solar panels on student buildings)

Finally, students were asked what sorts of things would inspire them to get involved with energy sustainability or carbon neutrality on campus. Students are most interested in opportunities to learn new skills or build their resume as well as paid opportunities. They also appear to be motivated by opportunities to be involved with faculty research, the provision of clear data that measures campus progress, and fun events. Interestingly, competitions, recognition for the university, and class projects associate with carbon neutrality do not appear to motivate most students to take action. Given prior focus on campus competition to motivate energy-efficient behaviors we further analyzed differences between those who are or are not interested in competitions. Although only significant at 90% confidence, we do find that those who are most interested in competition are also more likely to believe that changing individual behavior is an effective way to address carbon neutrality (Figure 75).

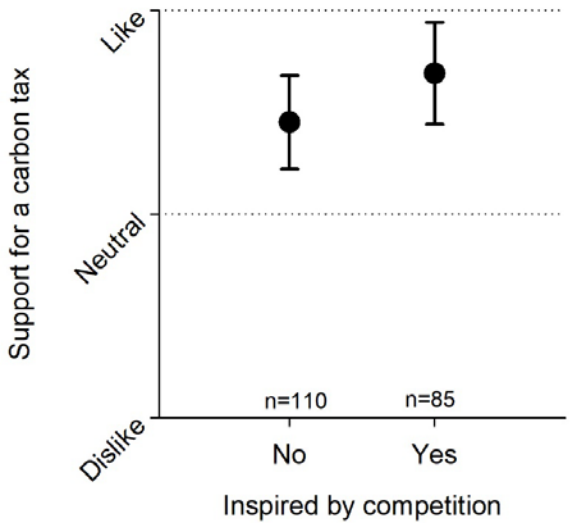

Figure 75. Student survey results: Inspired by competition vs. support for encouraging pro-environmental behavior. X-axis: Which opportunities might inspire you to get involved with energy sustainability or carbon neutrality on your campus? (Competition was one of 11 activities listed.) Y-axis: How effective do you feel the following are in encouraging pro-environmental behaviors on campus? Encourage people to reduce their personal energy usage (e.g. turn off the lights, bike to work, reduce use of heating and cooling, buy energy efficient appliances)

Student Survey Questionnaire on Student Engagement on Carbon Neutrality

INTRO 1 Thank you for coming to take our survey!

INTRO Fallon

[Image of Jimmy Fallon]

CONSENT TEXT We are a working group of UC researchers interested in understanding how students like you view UC projects and policies that reduce greenhouse gas emissions. Your input is important, so we would love for you to participate in this quick 10 minute survey. And as a thank you for your time, you can choose to be entered into a drawing to win an Amazon gift card ($30). (Odds of winning are approximately 1/1000). Before we begin, we request your consent to participate in the study. This means we will study your anonymous responses in aggregate, and won't share your confidential responses with anyone else. All data will be stored securely at the University of California, Santa Barbara, and destroyed completely within five years. You are welcome to exit the survey at any time or to skip any question, we won't mind! There won't be any negative consequences. So by participating in the survey, you are indicating that you grant consent for us to use your confidential data, that you are over the age of 18, and that you agree to the terms outlined here. If you have any questions about this study, please contact me, project co-PI, at lisa@bren.ucsb.edu (805-893-7427). I'm representing the UC-TomKat Strategic Communication Working Group. If you have any questions regarding your rights and participation as a research subject, please contact the Human Subjects Committee at (805) 893-3807 or hsc@research.ucsb.edu. Or write to the University of California, Human Subjects Committee, Office of Research, Santa Barbara, CA 93106-2050. Thank you for your interest! Lisa Leombruni, PhD

CONSENT Do you agree to participate in this survey?
Yes (1)

CN FAMILIARITY Are you familiar with strategies to reduce carbon emissions (e.g. carpooling, cap and trade, carbon tax, use of renewables, technologies that increase energy efficiency)?
Not at all (1) Somewhat (2) Very (3) Don't know (4)

SUPPORT TEXT There are a number of ways campuses like yours can reduce their carbon emissions. We want to know which strategies you prefer. Keep in mind, your campus is likely to pursue multiple options.

SUPPORT RENEWABLES How do you feel about different ways to acquire low-carbon energy?
Develop on-campus renewable energy (e.g., solar, wind, bio-gas) (1)
Strongly dislike (1) Dislike (2) Neutral (3) Like (4) Strongly like (5) Don't know /Unsure (6)
Develop off-campus renewable energy to supply your campus with energy (2)
Strongly dislike (1) Dislike (2) Neutral (3) Like (4) Strongly like (5) Don't know /Unsure (6)
Purchase Renewable Energy Credits (RECs) (in other words, pay a company for the right to claim environmental benefits of renewable energy they add to the grid) (3)
Strongly dislike (1) Dislike (2) Neutral (3) Like (4) Strongly like (5) Don't know /Unsure (6)

SUPPORT EFFICIENCY How do you feel about the following campus construction and purchasing strategies?
Increase energy efficiency in current buildings (1)
Strongly dislike (1) Dislike (2) Neutral (3) Like (4) Strongly like (5) Don't know /Unsure (6)
Require new buildings to be emission-free or to meet high sustainability certification standards (such as LEED platinum) (2)
Strongly dislike (1) Dislike (2) Neutral (3) Like (4) Strongly like (5) Don't know /Unsure (6)
Require purchase of goods and supplies whose production generates low levels of carbon emissions (e.g. laboratory equipment, computers, other appliances in offices or dorms) (3)
Strongly dislike (1) Dislike (2) Neutral (3) Like (4) Strongly like (5) Don't know /Unsure (6)

SUPPORT MARKET BASED How do you feel about potential ways to fund carbon emissions reduction projects on campus?
Impose a carbon fee such that the highest campus energy users would pay the largest fee (1)
Strongly dislike (1) Dislike (2) Neutral (3) Like (4) Strongly like (5) Don't know /Unsure (6)
Establish a student fee that would to help fund energy sustainability initiatives on campus (such as solar panels on student buildings) (2)
Strongly dislike (1) Dislike (2) Neutral (3) Like (4) Strongly like (5) Don't know /Unsure (6)

INDIVIDUAL BEHAVIOR How effective do you feel the following are in encouraging pro-environmental behaviors on campus?
Provide environmentally-friendly transportation options (e.g. car shares, electric buses) (1)
Not effective at all (1) Slightly effective (2) Moderately effective (3) Very effective (4) Don't know / Unsure (5) Not effective at all (1)
Encourage people to reduce their personal energy usage (e.g. turn off the lights, bike to work, reduce use of heating and cooling, buy energy efficient appliances) (2)
Not effective at all (1) Slightly effective (2) Moderately effective (3) Very effective (4) Don't know / Unsure (5) Not effective at all (1)

EMIS RED. IMPORTANCE How important is it to you that your campus reduce its carbon emissions as much as possible? (e.g., through cutting energy demand, increasing energy efficiency, and/or replacing fossil fuel energy sources with renewables)
Not at all important (1) Somewhat important (2) Important (3) Very important (4) Extremely important (5) Don't know / Unsure (6)

CNI FAMILIARITY How familiar are you with the University of California Carbon Neutrality Initiative?
Never heard of it (1) Somewhat familiar (2) Familiar (3) Don't know/unsure (4)

CNI DESCRIPTION What is the Carbon Neutrality Initiative? The University of California (UC) Carbon Neutrality Initiative (CNI) commits all ten UC campuses to eliminate or compensate for all greenhouse gas emissions associated with onsite combustion and purchased electricity by 2025. To achieve this goal, UC campuses will need to pursue a variety of strategies that include cutting energy demand, increasing energy efficiency, and replacing fossil fuel energy sources with renewables. Campuses will also need make investments or participate in programs that reduce emissions off campus to compensate for remaining campus emissions. Such investments and programs are generally referred to as “carbon offsetting”. The 2025 goal is very ambitious; the UC would be the first large university system to accomplish such a feat. It’s a challenging goal with a number of important considerations and tradeoffs, however.

CN IMPORTANCE Given what you know or have read above, how important do you feel it is for your campus to achieve the UC carbon neutrality goal?
Not at all important (1) Slightly important (2) Important (3) Very important (4) Don't know / Unsure (5)

CONDITION: Not at all important Is Selected. Skip To: Do you feel you know enough about the....Condition: Don't know / Unsure Is Selected. Skip To: Do you feel you know enough about the....

WHY SUPPORT CNI We are also interested in why you think carbon neutrality is important. How well do these reasons correspond to your feelings? Reaching carbon neutrality is important to me because:
It helps address climate change (1)
Strongly dislike (1) Dislike (2) Neutral (3) Like (4) Strongly like (5) Don't know /Unsure (6)
It can provide local health benefits (e.g. clean air) (2)
Strongly dislike (1) Dislike (2) Neutral (3) Like (4) Strongly like (5) Don't know /Unsure (6)
It can save my campus money (3)
Strongly dislike (1) Dislike (2) Neutral (3) Like (4) Strongly like (5) Don't know /Unsure (6)
We have a moral obligation to do so (4)
Strongly dislike (1) Dislike (2) Neutral (3) Like (4) Strongly like (5) Don't know /Unsure (6)

It will provide a sense of campus pride (5)
Strongly dislike (1) Dislike (2) Neutral (3) Like (4) Strongly like (5) Don't know /Unsure (6)
It will involve making progress toward other environmental justice goals I care about (6)
Strongly dislike (1) Dislike (2) Neutral (3) Like (4) Strongly like (5) Don't know /Unsure (6)
It is important for the UC to show leadership on environmental issues (7)
Strongly dislike (1) Dislike (2) Neutral (3) Like (4) Strongly like (5) Don't know /Unsure (6)

OTHER REASONS WHY Is there anything we left out that better describes how you feel about carbon neutrality on your campus?

ACTIONS Which actions would you be willing to take to help achieve carbon neutrality on your campus? (Please select all that apply)
Turn off electronics, lights, use less heating and cooling, use energy-efficient appliances and devices (1) Use more shared spaces to reduce your own need for space (2) Take green transit to campus (e.g. bikes, electric buses, carpool, walking) (3) Join a student group that promotes sustainability issues such as carbon neutrality (4) Join a campus committee or student government to represent student perspectives on carbon neutrality (5) Participate in demonstration, march, or protest (6) Sign a petition or other document to show your support (8) Attend an informational or informal event (7) Talk to faculty, staff, or administrators about the issue (9) Discuss the issue with your peers (10) Work on a class project focused on carbon neutrality (11) Complete an internship related to the issue (12) Take a class focusing on the subject (13) None of the above, I'd rather do something else (please specify) (14) _____ None of the above, I'm not interested in taking action right now (15)

KNOWLEDGE CN Do you feel you know enough about the issue of carbon neutrality to have an informed opinion?
Definitely not (1) Probably not (2) Neutral (3) Probably yes (4) Definitely yes (5) Don't know / Unsure (6)
OTHER ACTIONS CC Do you think that carbon neutrality is an effective way to address climate change?
Definitely not (1) Probably not (2) Neutral (3) Probably yes (4) Definitely yes (5) Don't know / Unsure (6)

INITIATIVE IMPORTANCE How important are each of the following UC-wide sustainability programs and initiatives to you?
Global Food Initiative commitment to promoting food security, health and sustainability on UC campuses and around the world (1)
Not at all important (1) Slightly important (2) Important (3) Very important (4) Don't know / Unsure (5) Not at all important (1)
Green buildings commitment to sustainable building design and operation for UC campuses (2)
Not at all important (1) Slightly important (2) Important (3) Very important (4) Don't know / Unsure (5) Not at all important (1)
Zero Waste Initiative commitment to sending zero UC waste to landfill by 2020 (3)
Not at all important (1) Slightly important (2) Important (3) Very important (4) Don't know / Unsure (5) Not at all important (1)
Water conservation commitment to reducing UC per capita potable water consumption 20% by 2020 (4)
Not at all important (1) Slightly important (2) Important (3) Very important (4) Don't know / Unsure (5) Not at all important (1)
Carbon Neutrality Initiative commitment to eliminating or compensating for all UC operations-related carbon emissions by 2025 (5)
Not at all important (1) Slightly important (2) Important (3) Very important (4) Don't know / Unsure (5) Not at all important (1)
Eco-transportation commitment to promoting alternative transportation and providing affordable on-campus housing for UC campuses (6)

Not at all important (1) Slightly important (2) Important (3) Very important (4) Don't know / Unsure (5) Not at all important (1)

TRADEOFFS DESCRIPTION Prioritize Carbon Neutrality? Reaching carbon neutrality requires careful consideration of tradeoffs. This could involve reducing spending for other campus programs or services. While no specific plans have been finalized, there might be, for instance, reductions in building amenities and/or departmental budgets. Each campus will need to determine how reaching carbon neutrality by 2025 should be prioritized in the context of other campus goals.

TRADEOFFS Given these potential tradeoffs, do you think carbon neutrality should be a priority for your campus?

Definitely not (1) Probably not (2) Probably yes (3) Definitely yes (4) Don't know / Unsure (5)

OFFSET TEXT The Question of Carbon Offsets Some campuses are also considering purchasing carbon offsets. A carbon offset is a CO2 (or other greenhouse gas) reduction in one location that is used to compensate for (or "offset") emissions made at another location. By acquiring or developing carbon offsets, institutions can claim reductions in their carbon footprint.

OFFSETS Would you say it is important for your campus to reach carbon neutrality by 2025, even if it means buying carbon offsets?

Definitely not (1) Probably not (2) Probably yes (3) Definitely yes (4) Don't know / Unsure (5)

OFFSETS VS. E-EFFIC Do you support the purchase of carbon offsets to allow the UC to reach carbon neutrality by 2025, even if it means investing less in long-term energy efficiency projects and improvements?

Definitely not (1) Probably not (2) Probably yes (3) Definitely yes (4) Don't know / Unsure (5)

DIVESTMENT TEXT DIVESTMENT Emissions associated with financial investments are not currently considered part of the UC's carbon emissions and are not included in the UC's carbon neutrality goals. To date, the University has divested approximately 15% of its fossil fuel holdings. As you may know, there is a student- and faculty-led movement to pressure the UC Regents to completely divest from fossil fuels.

DIVESTMENT How important do you think it is for the UC to divest from fossil fuel companies?

Definitely not (1) Probably not (2) Probably yes (3) Definitely yes (4) Don't know / Unsure (5)

STUDENT ORGS Are you currently involved with any student/campus organizations?

Yes (1) No (2) Unsure (3)

SUST ORGS Are you currently involved with any student/campus organizations that are related to sustainability?

Yes (1) No (2) Unsure (3)

ORGS LISTED Please list the student/campus groups you are involved with.

INSPIRE Which opportunities might inspire you to get involved with energy sustainability or carbon neutrality on your campus? (Please select all that apply, including those activities you are already engaged in, if applicable)

Paid opportunities (e.g., student fellowships or internships) related to these topics (1) Opportunities to learn new skills and/or build your resume (2) Competitions between other universities/dorms/departments (3) Fun events/prizes/free food (4) Seeing data that measures your campus's progress (5) Getting class credit to attend an event (6) Working on class projects or independent research related to these topics (7) Receiving recognition from the university for your efforts (student of the month, etc.) (8) Opportunities to be involved with faculty research related to these topics (9) Other (please specify) (10) _____ I'm not interested in getting involved at this time (11)

COMMUNICATION Which forms of communication are effective in getting you to pay attention to causes on campus? (Please select all that apply)

Emails (1) Flyers and signs hung around campus (2) Course material (3) In-class announcements (4) Social media (5) Hearing about it from friends (6) People canvassing and tabling on campus (7) On-campus demonstrations (8) Guest speakers (9) Events (10) Other (please specify) (11) _____

CLICK CNI We have thrown a lot of information at you about carbon neutrality. If you want to see how your campus is addressing carbon neutrality and sustainability check out the link below. Click here!

Q46

[Image of Minions from "Despicable Me" film]

TRANSITION Almost done! We just want to ask you a few more questions about your background. After that, you can enter into the drawing for a $30 Amazon gift card!

CLASS RANK What is your current student status?

Undergraduate - Freshman (1) Undergraduate - Sophomore (2) Undergraduate - Junior (3) Undergraduate - Senior (4) Graduate - Masters (5) Graduate - PhD (6)

RACE What is your ethnic background/race?

Black/African American (1) Hispanic or Latino/a (2) American Indian or Alaska Native (3) Asian (4) Native Hawaiian or other Pacific Islander (5) White/Caucasian (6) Other (please specify) (7)

GENDER Do you think of yourself as...?

Male (1) Female (2) Gender non-conforming (3) Other (please specify) (4) Prefer not to identify (5)

LGBTQI Do you think of yourself as gay or lesbian, bisexual, transgender, transsexual and/or belonging to the LGBTQI community?

Yes (1) No (2)

POLITICS Generally speaking, do you consider yourself to be politically:

Very conservative (1) Conservative (2) Somewhat conservative (3) Moderate (4) Somewhat liberal (5) Liberal (6) Very liberal (7) Don't think of myself in these terms (8)

MAJOR Please select your primary academic division.

Arts and Humanities (1) Business and Management (2) Education (3) Engineering and Computer Science (4) Environmental Sciences or Environmental Studies (5) Interdisciplinary (6) Law (7) Life Sciences (8) Mathematics and Statistics (9) Medicine and Health Sciences (10) Physical Sciences (11) Social Sciences and Psychology (12) Other (please specify) (13)

Debrief Text Thank you so much for your time! The purpose of this survey was to see what you think about carbon neutrality on your campus. In addition, we were interested in whether students would be willing to read more information on the CNI after taking part in this survey. If you would like to be entered in a drawing to win a $30 Amazon gift card include your email address below. Remember, your email will be stored separately from and not be associated with your confidential, anonymous responses!

EMAIL ADDRESS Email address

FEEDBACK If you have any comments or questions please share below. Many thanks again!

6.1.5. Student Focus Groups

A recent Master's thesis project at UC Santa Barbara's Bren School of Environmental Science and Management explored strategies for achieving carbon neutrality at UCSB[2]. This research looked at the technical feasibility of rooftop solar generation on campus, the economics of investing in different carbon neutrality strategies, and communication strategies for engaging key stakeholders in carbon neutrality efforts at UCSB.

The communication research included interviews and focus groups with UCSB faculty, staff, and students, as well as a campus-wide student survey. This research found that while the majority of the general student body was not interested in anything more than signing a student petition, student leaders—those actively involved in organizations and governing bodies—were key change agents. These student leaders could gather enough student support to pressure the campus administration to implement carbon neutrality measures. In particular, environmentally focused student leaders were found to already be willing to further the CNI and only lacked actionable methods to do so.

To add to this research, it was determined that focus groups targeting environmentally engaged student leaders on other campuses would be useful to test whether these conclusions, were specific to UCSB or if they held true elsewhere. Focus groups composed of non-environmentally engaged student leaders were also scheduled to determine how responsive this audience would be to supporting the CNI.

Based on informal interviews, meetings, and a literature review, concern had also arisen regarding environmental student leader support for two controversial issues: 1) the use of off-campus strategies to meet the CNI, i.e. offsets and renewable energy credits; and, 2) an increase in student fees or a decrease in other resources to fund the CNI. Finally, different message frames needed testing to identify which message frames would be most effective in engendering support from student leaders.

Methodology

Design and Recruitment

Two one-hour focus groups were scheduled at UCLA on May 19, 2017, and two more at UC San Diego on June 2, 2017. Focus groups targeted two different audiences: environmentally engaged student leaders and non-environmentally engaged student leaders. To aid in recruitment, UC staff and students from these campuses were contacted and asked to announce the focus groups via email and through their professional networks. To further incentivize participation, pizza and beverages were served during the focus groups.

Despite these recruitment efforts student participation was less than ideal and participants were primarily environmentally focused students. One focus group was held at UCLA, consisting of 15 participants* and one focus group of 10 participants was conducted at UC San Diego. Only one student participating in the second scheduled UC San Diego focus group. Rather than cancel this focus group, an interview using the same moderator guide was conducted instead. There are limitations to the generalizability of these results given the low N. However, these focus groups addressed a few topics that were not covered systematically in any of the other studies. Therefore, though limited, the insights gained in the focus groups provide some value for developing communication strategies to support UC's Carbon Neutrality Initiative.

Two members of the research team co-moderated, while one member took notes. Slides were used as visual cues, and to keep the discussion on track and to facilitate message testing. Finally, each focus group was recorded for ease of subsequent analysis.

* The number of participants varied at any given time (from 6-15 participants) as some were not able to stay for the duration of the group and others arrived after the start of the discussion. Because of the difficulty in recruiting participants, we chose to continue the focus group in this manner.

Research Questions

The focus groups were intended to answer the following research questions, which were categorized into six overarching themes:

1. **Student values and identity:** What are core UC student values, and how can messaging about the CNI align with this? Do students identify with the UC system as a whole, or with their specific campus?
2. **Motivation and engagement:** What campus organizations or initiatives excite students? What about these organizations and initiatives motivates students to get involved?
3. **Awareness and value of the CNI:** Do students understand what "carbon neutrality" means? How and why are students aware of the CNI? Do they feel it is a worthwhile goal for their campus?
4. **Attitudes towards carbon neutrality strategies, and purchase of carbon offsets:** Achieving carbon neutrality will likely come through a mix of actions, including installing new renewable generation on campus, retrofitting buildings for improved energy efficiency, as well as through the purchase of renewable energy credits and carbon offsets to counter unavoidable emissions. How do students value these different strategies? How well do students understand carbon offsets, and what is their attitude towards the use of campus funds for off-campus carbon reduction strategies?
5. **Attitudes towards trade-offs in financing the CNI:** Financing carbon neutrality may require diverting funds from other campus initiatives, and/or through increased student fees. How do students feel about these potential trade-offs and would they support an increase in fees to help pay for carbon neutrality?
6. **Messaging and framing:** Which message frames are more effective at engaging student leaders?

The message framing portion of the focus groups was originally intended to be an open-ended, brainstorming session guided by the co-moderators. However, given the large number of research questions and the limited time, five message frames were decided upon prior to the focus groups. These five frames were created in several collaborative brainstorming sessions and included the input of Lisa Leombruni, Heather Hodges, and Robin Raj. The frames selected are:

1. "**We Can't Wait" -** This message frame would create a sense of urgency around climate change action, with a series of fill-in-the-blank quotes: "_____ Can't Wait"
2. "**The UC Carbon Challenge"** - This would frame emissions reduction efforts as a challenge between campuses, to promote friendly competition
3. **"Be a UC Climate Solutionary"** - framing carbon neutrality measures as solutions and celebrating the solution makers
4. **"UC Carbon Responsibility"** - framing carbon neutrality as a personal and institutional responsibility
5. **"Climate Justice is Social Justice"** - framing carbon neutrality as a social justice issue.

Results

1. Campus-Specific Identity

All student participants identified with their respective campus, not the UC system as a whole. They knew little about the other campuses and mentioned that student organizations and initiatives were focused to their campuses. Given that their interactions with the university all occur at the campus level, it makes sense that they identify with their campus and not the entire UC system.

UCLA students also expressed a strong Californian identity; they were proud of California's role as an environmental leader, especially given the current presidential administration's stance on the environment.

2. Actionable Items Needed for Motivation and Engagement

UCLA and UCSD students overwhelmingly responded that their motivation to engage with campus initiatives and groups was to seek out opportunities that allowed them to take ownership of the task at hand and to have the freedom to determine the direction a project takes. Moreover, these students prefer hands-on activities, rather than simple items on a page.

In a discussion of existing campus initiatives that were successful in motivating students to participate, UCLA students mentioned an annual dance marathon that raised money for pediatric AIDs, as well as a sustainable music festival put on each year. Students explained how these fun, social initiatives were successful in bringing student groups together across the entire campus to the point where they have now become embedded in campus traditions.

3. Low Awareness and Understanding of CNI

While most of the students had heard of the CNI, when they were asked to elaborate they were unable to explain what carbon neutrality actually meant, with many responses involving unrelated topics such as divestment, recycling, and achieving 100% renewable energy. They seemed confused as to which campus environmental initiatives were aligned with the CNI and what the campus had done towards achieving carbon neutrality. Further, they didn't believe that the majority of the general student body had heard of the CNI or that the student body would want to participate unless they were environmentally focused.

4. Offsets and Behavior Change are Controversial

After displaying a graphic that showed a potential mix of strategies to meet carbon neutrality (listed above under Methodology), two key student sentiments were identified: 1) a hesitant and mostly negative reaction to the use of offsets, and 2) concern as to why behavior change was not included as a strategy for meeting carbon neutrality.

Initial reactions towards offsets were negative, however many students didn't understand what offsets were. After a clear definition of offsets was established, there was a mix of student reactions. Most were opposed, with one student quoted as saying offsets felt "like a cop-out". They wanted university resources to be spent on on-campus strategies that directly benefited the campus. But, after displaying screen shots of marketing material depicting a rainforest protection and reforestation offset project, some students modified their response. They were willing to accept verified offsets, as long as the offset projects were transparent. Overall however, students still felt that even if offsets were used, they should not be a heavily utilized strategy for achieving carbon neutrality.

Reactions towards behavior change were more unified. Students didn't understand why strategies for meeting the CNI didn't incorporate behavior change. This reflects earlier sentiments regarding motivation and engagement. Students want actionable ways to reduce carbon emissions, and behavior change represents a clear way for them to participate in the CNI.

5. Funding the CNI: A Lack of Trust

Students voiced mistrust over how UC handles funds. For instance, UCLA students brought up a recent scandal involving the potential concealment of funds by UCOP (~$175 million in a private reserve), which generated broad skepticism among students as to whether UCOP funds were being spent wisely. Similarly,

UCSD students cited a recently installed commemorative engraving, seal, and bench that used $30,000 in UCSD student fees, as another example of misappropriated funds[3]. Other students highlighted the top-down nature of the CNI and commented that if this entire project was the UCOP's idea, then they [UCOP] should figure out how to fund it without affecting students. However, the majority of participants felt that the general student body would be willing to accept an increase in student fees, as long as there was considerably more visibility in how their money was being spent.

For example, The Green Initiative Fund (TGIF) was an initiative that increased fees and was supported by the student body. Students explained that the key reason for accepting this fee increase was that they were able to witness the kinds of projects it helped finance, and also because the initiative was student-driven. It's also important to note that the projects supported by TGIF are created by students and represent an actionable way for them to reduce UC's environmental impact.

6. Messaging and Framing

The student participants of the focus groups conducted at UCLA and UCSD supported different message frames, which was influenced by the differences between the two campuses. For instance, the UCLA campus students overwhelmingly agreed that the social justice frame would be best received because their campus placed a large emphasis on social justice. By linking the CNI with environmental justice, the UCLA students felt that a clear connection could be made to the broader category of social justice, which would engage many students who were actively involved with social justice issues. However, UCSD didn't seem to place as large a focus on social justice issues, and the students at the UCSD focus group didn't think that environmental justice and social justice were clearly linked. Instead, these students preferred the "We Can't Wait" message frame, which used a sense of urgency to engage students. But, the UCLA students felt that the "We Can't Wait" frame would simply agitate the general student body—especially without actionable methods, such as examples of behavior change—who would then ignore one the message.

This difference in opinion can be traced to the difference between the campus cultures, which reinforces the finding about campus-specific messaging.

Conclusions and Recommendations

1. Student Awareness Needs to be Increased.

The group of highly motivated, environmentally focused student leaders at UCLA and UCSD knew little about the CNI. What's more, they mentioned that few of their environmental friends had heard of the CNI and that no one they knew outside of their environmental department was aware of the CNI. These results are consistent with research done at UCSB, and indicate that general student awareness regarding the CNI is most likely very low across the UC campuses.

For students to support the CNI, especially if it raises student fees, they need to understand what it is. This is even more important for environmental student leaders, who could play a key role in recruiting student support for or against the CNI.

2. Campus Specific Messaging is Important.

Both focus groups mentioned that they identified with their specific campus and knew little about the other UC campuses. This suggests that messages based on a specific campus cultures and norms will be much more effective at engaging students than a message targeting the entire UC system.

3. Students Need Actionable Methods to Engage with the CNI.

Students mentioned several times the importance of providing actionable items as part of an initiative to increase student support for it. For example, the ability for students to both create energy efficiency projects and fund those same projects was part of the reason for TGIF's popularity among students. The dearth of outreach to educate the student body about the CNI and the complete absence of behavior change strategies in the CNI represents a potential obstacle in providing students—particularly highly motivated environmental student leaders—with ways to participate in reducing UC's carbon emissions. An effort to increase student engagement must also include more ways for students to participate with the CNI.

4. Increased Transparency is Needed for Broader Student Support

Improving transparency around the CNI—e.g. what the CNI is, what strategies are being considered, how they will be funded, and what students can do to help— is necessary for improving student trust with the initiative and the UCOP in general.

Distrust of UCOP and high-level UC administration in general was a common theme in both focus groups. Participants mentioned a lack of transparency regarding the allocation of student-raised funds as a large part of this mistrust. However, students seemed willing to support some amount of increase to their fees if they could tell where their money was going, and they cited TGIF as an initiative that was successful, in part, due to its transparency. Further, offsets, a controversial topic among students, could be supported if the off-campus projects were clear in where and how their funds were being spent.

Focus Group Moderator Guide

Moderating Goal

To better understand what students value and whether the goals of the Carbon Neutrality Initiative (CNI) align with student interests and priorities, and to inform potential future framing of messages and tactics used for the CNI, we aim to achieve the following objectives through focus groups:

1. Determine student values, and how students identify with their campus and the UC system.
2. Find out what motivates students to become engaged in student groups/committees and to take action (e.g. sign a petition).
3. Gauge student awareness about CNI, their understanding of it, and their attitudes towards offsets and other potential emissions-reduction intervention strategies.
4. Determine students' willingness to accept tradeoffs (e.g. fewer building amenities, decreased departmental budgets, potential decreased staff and administration salaries, reduced administration travel, increased student fees) to reach CNI, as well as tradeoffs involving the use of offsets.
5. See what students feel about the use of offsets, and whether students consider them to be worth purchasing to help reach carbon neutrality. Ascertain whether students still believe them to be worthwhile if it might mean decreased spending on long-term energy efficiency projects on campus.
6. Determine whether students might be more willing to support carbon neutrality if it is presented as another issue, or from the perspective of a non-environmental group (coalition building).

Opening Statement

Welcome everybody and thank you for being here today! (introduce group) We're a team of researchers from UC Santa Barbara, and we'd like to talk with you today about your values as a UC student, and how you feel about sustainability and environmental policies at UC. We will be asking you a series of open-ended questions, which we'd love your honest opinions on. Think of this as a discussion session in class, but one where everyone gets the chance to participate and share their ideas and opinions!

We are part of a larger research group, the UC-TomKat Carbon-Neutrality Strategic Communication Working Group, a group of faculty, researchers, and students from UC campuses who are investigating the extent to which the UC-system should prioritize the commitment to have zero net carbon emissions from our buildings and transportation fleet by 2025. But we will get more into those details a little later.

Anything that you share in this context will remain strictly confidential. Any ideas you share here will be used to inform our report, but your responses will remain anonymous—so please feel free to speak your mind! We will also be voice-recording this session to assist us with note taking later, but it will be kept strictly confidential and no one outside of this project will hear the recording.

Lastly, we want to emphasize that there are no wrong answers, so don't be afraid to share your opinions or thoughts. If you don't understand a question, or something that's been said, please ask for clarification.

Before we start, we'd also like to set a couple of ground rules: 1. Please don't talk over your fellow participants, and allow everyone to participate and voice their opinion, and 2. Let's make this a constructive conversation--it's fine to disagree with what someone has said, or voice an opposing opinion, but please do so respectfully.

Are there any questions?

Ok, let's get started!

1. Student identity and values:
    a. What are some things that you experience or participate in on your campus that make you proud to be a UC student? (Trying to get at: what does it mean to you to be a UC student?)
        i. What do you think makes your campus unique?
        ii. Do you think these experiences and feelings are specific to you? Or do most of your fellow students feel the same way? (Trying to get at: different identities and values, without calling it a "value" in the question, directly)
2. What motivates students:
    a. What campus initiatives, groups, or events interest you?
    b. Why do these excite you and why are they important to you?
    c. What do the students you represent or spend time with get most excited about?
    d. How do you decide to get involved in a cause on campus?
    e. What have you found to be the most effective at getting students organized and mobilized?
    f. Which individuals or groups are influential or active on campus?
    g. Which student groups or individuals do you trust the most?
    h. Have you seen examples of campus initiatives coming together to support each other? Were these effective, and if so, why? (Try to get at coalition building)
3. Knowledge and attitudes towards sustainability, focusing into carbon neutrality as the conversation continues:
    a. What campus environmental initiatives are you aware of?
    b. Which do you care most about and why? Which do you think are most important?
        i. Why do you value these particular environmental initiatives? (Try to get at motivation)
    c. Has anyone heard of the Carbon Neutrality Initiative? Can you describe it?
        i. Who knows what carbon neutrality means? [Explain carbon neutrality and CNI through use of an infographic that explains tactics to reduce carbon emissions]
        ii. Do you think that this is an important goal for your campus? Why or why not?
    d. Climate change is sometimes framed as a social justice issue—do you think framing carbon neutrality in terms of social justice would improve student support for the initiative? (Try to get at alternative frames that could be used for climate neutrality)
4. Mitigation Strategies / Tradeoffs:
    a. The UC campuses have limited budgets, and money can be invested to work towards carbon neutrality in a variety of strategies. Are some strategies more or less acceptable to you? Why or why not? (include a graphic to explain the strategies) [Lay out here all of the different strategies to achieve carbon neutrality/energy sustainability:]
    b. Demand-side
        i. Increase energy efficiency in current buildings
        ii. Provide environmentally-friendly transportation options (e.g. car shares, electric buses)
        iii. Encourage people to reduce their personal energy usage (e.g. turn off the lights, bike to work, reduce use of heating and cooling, buy energy efficient appliances)
        iv. Require purchase of goods and supplies whose production generates low levels of carbon emissions (e.g. laboratory equipment, computers, other appliances in offices or dorms)

        v. Require new buildings to be emission-free or to meet high sustainability certification standards (such as LEED platinum)
    c. Supply-side
        i. (onsite) Develop on-campus renewable sources of energy (e.g., solar, wind, bio-gas)
        ii. (offsite) Develop off-campus renewable energy to supply your campus with energy
        iii. (offsite) Purchase Renewable Energy Credits (RECs) (in other words, pay a company for the right to claim environmental benefits of renewable energy they add to the grid)
    d. Offsets
    e. Carbon Offsets: Who here is familiar with a carbon offset? Explain what a carbon offset is: "A carbon offset is a CO2 (or other greenhouse gas) reduction in one location that is used to compensate for (or "offset") emissions made at another location. By acquiring or developing carbon offsets, institutions can claim reductions in their carbon footprint." Also describe a little more detail about the types of projects that generate carbon credits that can be sold as offsets. In particular, highlight the distinction between renewable energy vs. other types (e.g., reforestation/forest preservation) of offsetting projects.
        i. How do you feel about your campus purchasing carbon offsets to compensate for its carbon emissions? Do you support the purchase of carbon offsets to reach CN?
        ii. If achieving CN was not financially feasible without purchasing offsets, would you prefer to not use offsets at all, even if it meant not reaching CN?
5. Financial mechanisms
    a. Do you support the use of fees to help your campus achieve CN?
        i. Ask them how they feel about different types of fees: student self-imposed, fees on highest energy users, student fees matched by campus/UCOP (if students vote to impose fees on themselves, then UCOP match it)
        ii. Would you support fees if they went to certain projects, but not others? E.g. investing in energy efficiency, purchasing offsets, renewables on campus like solar arrays (to get at whether they would impose fees on themselves for certain strategies, but not others) Why or why not?
    b. Green reinvestment: UCSB has proposed using the money that would be spent on offsets to invest in a fund for initiatives that lower the carbon emissions from UCSB and have a return on investment, essentially a self-replenishing fund. Keep in mind that this fund might take a long time to replenish, since some projects take up to a decade to see a return on investment. [Alternative wording: (something like) Money saved from investments in energy efficiency could be used to fund more energy efficiency projects, but it could also be used in other ways [insert here other ways that the money could be used. Note also that there is a "slush fund" that gets returned to a general fund, except sports.]
        i. What do you think about a green reinvestment fund?
6. Transparency
    a. What do you think about data transparency and monitoring? This would mean your campus would provide you information on carbon emissions from different building or activities, and you could monitor progress in reducing emissions.
7. Overall, what do you think about the Carbon Neutrality Initiative?
    a. Do you think this is a worthwhile goal for the UC system? Why or why not?
    b. Do you think carbon neutrality should be a top priority for the UC system? (add here the primary elements of the UC mission and ask how the CNI should be prioritized in the context of these things)
    c. Is anything about the CNI specifically, or more generally, that they feel conflicts with programs they care about

Ok, that's it for our questions. But do any of you have any remaining questions or ideas that we have not covered or discussed? Thank you so much for your time and your insights, what you shared is so valuable to the project! If you'd like to learn more about the project, please come speak with us!

6.1.6. Student Research for Engagement

6.1.7. Student Government Barriers Analysis

Engagement by Design

Collaborative student research to inform student engagement campaigns

Stacy Rebich Hespanha, PhD
Senior Fellow, National Center for Ecological Analysis & Synthesis
UC Santa Barbara

California Higher Education Sustainability Conference
June 27, 2017

UC-TomKat Carbon Neutrality Strategic Communication Working Group

TOMKAT FOUNDATION · UNIVERSITY OF CALIFORNIA · UCSB · NCEAS · the INSTITUTE for ENERGY EFFICIENCY

6/27/2017

UC-TomKat Carbon Neutrality Communication Strategy Working Group

- Purpose and goals
  - "Develop an inclusive, effective, cost-efficient plan for strategic communications to help UC achieve carbon neutrality in its campus operations & purchased energy by 2025"
  - In-depth audience research, stakeholder assessment & testing of communication interventions

6/27/2017

UC-TomKat Carbon Neutrality Communication Strategy Working Group

- Working group project
  - Collaboration between researchers, practitioners and students from across the UC system
  - 1 year project; 3 in-person meetings + much virtual collaboration
  - Synthesis of existing knowledge and collection of new data
  - Leveraging collective intelligence and synergistic activities

6/27/2017

UC-TomKat Carbon Neutrality Communication Strategy Working Group

- Research and capacity building activities
  - Review of existing literature and reports
  - Analysis of UC sustainability-themed news (content & web analytics)
  - Systems mapping and administrative analysis (interviews)
  - Faculty audience analysis (systemwide survey, interviews)
  - Student audience analysis (systemwide survey, interviews, barriers analysis)
  - Message and strategy testing (focus groups, interviews)
  - Capacity development for student engagement (student collaborator involvement, workshop, collaborative research and toolkit development)

6/27/2017

UC-TomKat Carbon Neutrality Communication Strategy Working Group

- Research and capacity building activities
  - Review of existing literature and reports
  - Analysis of UC sustainability-themed news (content & web analytics)
  - Systems mapping and administrative analysis (interviews)
  - Faculty audience analysis (systemwide survey, interviews)
  - Student audience analysis (systemwide survey, interviews, barriers analysis)
  - Message and strategy testing (focus groups, interviews)
  - **Capacity development for student engagement** **(student collaborator involvement, workshop, collaborative research and toolkit development)**

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Synthesis & Student Engagement Research Subgroup

- Rationale
  - Participatory research
- Goals
  - Broaden perspective of working group
  - Research (lit review & data collection)
  - Merging of research and practice: capacity development for student engagement

6/27/2017

Synthesis & Student Engagement Research Subgroup

- Student collaborators from across the UC system
  - UC Carbon Neutrality Initiative Student Engagement Fellows (UCR, UCLA, UCD, UCSB, UCB)
  - TomKat interns (UCSB)
  - SEI interns (UCSD, UCM)

6/27/2017

Synthesis & Student Engagement Research Subgroup

- Research activities
  - ***Winter 2017***: Research literature review
  - ***Winter/Spring 2017***: Workshop in Santa Barbara
    - Literature review presentation
    - Breakout sessions
    - Research question development
  - ***Spring 2017***: Research design + recommendations drafting
  - ***Summer 2017***: Data collection & analysis + report writing

6/27/2017

Impact on the Working Group

- **Stronger and more accurate** representation of varied perspectives in working group discussions
  - Student perspectives
  - Different UC campus perspectives
- **Broader** networks that have facilitated research and outreach opportunities
  - Data collection
  - Document review
  - [anticipated] Report dissemination
- **Unanticipated** working group products
  - Financial and energy strategy workshop materials
  - Recommendations for strengthening the UC-CNI Student Engagement fellows program
- **Creative** research directions + **expertise** to pursue them
  - Focus on role of student government in campus decision-making

6/27/2017

Workshop Materials

- **UC-CNI Energy Strategy Options**

Energy Strategies Breakout Session: Emissions Reductions Perspective

1. Please read the following prompt and complete the exercise on your own
2. Compare your responses with other participants who completed same activity; try to arrive at consensus and complete an additional worksheet for group consensus
3. Write values arrived at by your group up on the board

The UC system can pursue a variety of energy strategies in order to achieve its carbon neutrality goals. From your perspective, what portion of the needed emissions reductions should be achieved through each of the following strategies? (Be sure to check that your total adds up to 100%.)

UC Emissions Reductions Strategy	*Ideal* Percentage (%)		*Practical* Percentage (%)	
Energy Efficiency - Invest in energy efficiency to reduce energy consumption				
Behavior Change - Incentivize behavio changes to reduce energy consumptior				
On-Campus Renewable Energy - Generate renewable energy on campuses		Or **Total for all 3 RE strategies**		Or **Total for all 3 RE strategies**
UC Renewable Energy - Purchase energy from UC-managed renewable projects				
Utility Renewable Energy - Purchase renewable energy from utility companies				
Carbon Offsets - Purchase carbon offsets				
Other - please specify				

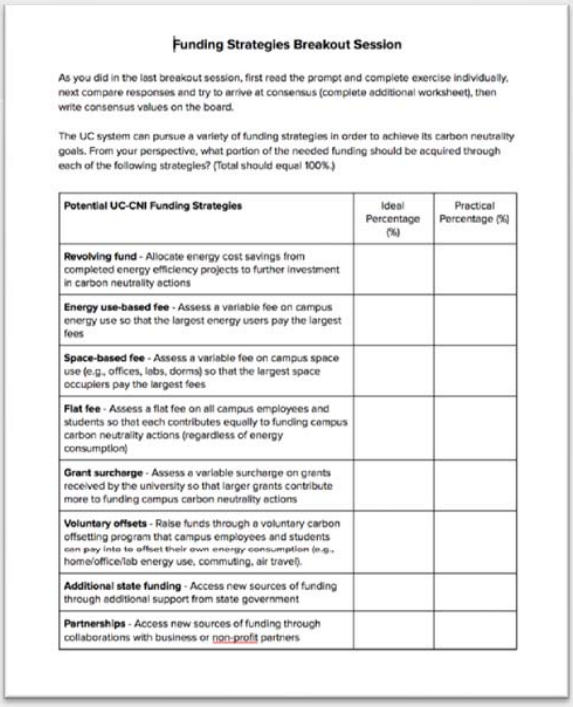
What is the reasoning behind your strategy choices? (use back of page, if needed)

6/27/2017

Workshop Materials

- UC-CNI Energy Strategy Options
- **UC-CNI Funding Strategy Options**

6/27/2017



Funding Strategies Breakout Session

As you did in the last breakout session, first read the prompt and complete exercise individually, next compare responses and try to arrive at consensus (complete additional worksheet), then write consensus values on the board.

The UC system can pursue a variety of funding strategies in order to achieve its carbon neutrality goals. From your perspective, what portion of the needed funding should be acquired through each of the following strategies? (Total should equal 100%.)

Potential UC-CNI Funding Strategies	Ideal Percentage (%)	Practical Percentage (%)
Revolving fund - Allocate energy cost savings from completed energy efficiency projects to further investment in carbon neutrality actions		
Energy use-based fee - Assess a variable fee on campus energy use so that the largest energy users pay the largest fees		
Space-based fee - Assess a variable fee on campus space use (e.g., offices, labs, dorms) so that the largest space occupiers pay the largest fees		
Flat fee - Assess a flat fee on all campus employees and students so that each contributes equally to funding campus carbon neutrality actions (regardless of energy consumption)		
Grant surcharge - Assess a variable surcharge on grants received by the university so that larger grants contribute more to funding campus carbon neutrality actions		
Voluntary offsets - Raise funds through a voluntary carbon offsetting program that campus employees and students can pay into to offset their own energy consumption (e.g., home/office/lab energy use, commuting, air travel).		
Additional state funding - Access new sources of funding through additional support from state government		
Partnerships - Access new sources of funding through collaborations with business or non-profit partners		

Impact on the Working Group

- **Stronger and more accurate** representation of varied perspectives in working group discussions
  - Student perspectives
  - Different UC campus perspectives
- **Broader** networks that have facilitated research and outreach opportunities
  - Data collection
  - Document review
  - [anticipated] Report dissemination
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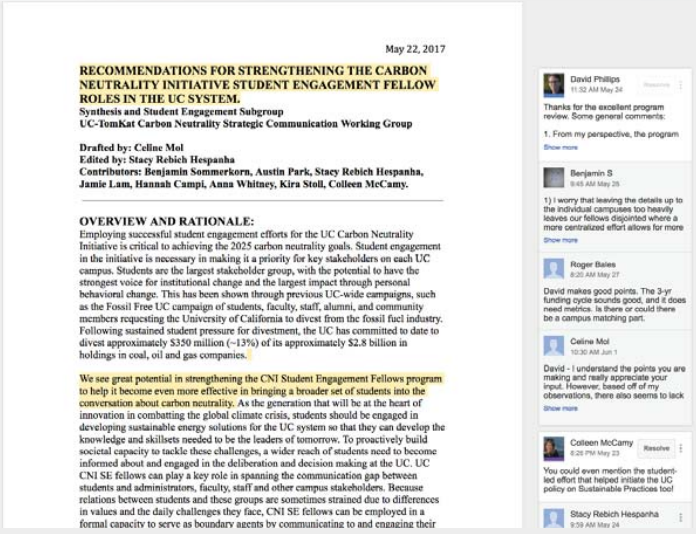
- **Creative** research directions + **expertise** to pursue them
  - Focus on role of student government in campus decision-making

6/27/2017

Recommendations for CNI Student Engagement Fellows Program

- Emerged spontaneously from conversation held during the workshop
- Collaborative drafting maintained momentum after workshop
- Opened dialogue with fellowship management staff



May 22, 2017

RECOMMENDATIONS FOR STRENGTHENING THE CARBON NEUTRALITY INITIATIVE STUDENT ENGAGEMENT FELLOW ROLES IN THE UC SYSTEM.
Synthesis and Student Engagement Subgroup
UC-TomKat Carbon Neutrality Strategic Communication Working Group

Drafted by: Celine Mol
Edited by: Stacy Rebich Hespanha
Contributors: Benjamin Sommerkorn, Austin Park, Stacy Rebich Hespanha, Jamie Lam, Hannah Campi, Anna Whitney, Kira Stoll, Colleen McCamy.

OVERVIEW AND RATIONALE:
Employing successful student engagement efforts for the UC Carbon Neutrality Initiative is critical to achieving the 2025 carbon neutrality goals. Student engagement in the initiative is necessary in making it a priority for key stakeholders on each UC campus. Students are the largest stakeholder group, with the potential to have the strongest voice for institutional change and the largest impact through personal behavioral change. This has been shown through previous UC-wide campaigns, such as the Fossil Free UC campaign of students, faculty, staff, alumni, and community members requesting the University of California to divest from the fossil fuel industry. Following sustained student pressure for divestment, the UC has committed to date to divest approximately $350 million (~13%) of its approximately $2.8 billion in holdings in coal, oil and gas companies.

We see great potential in strengthening the CNI Student Engagement Fellows program to help it become even more effective in bringing a broader set of students into the conversation about carbon neutrality. As the generation that will be at the heart of innovation in combatting the global climate crisis, students should be engaged in developing sustainable energy solutions for the UC system so that they can develop the knowledge and skillsets needed to be the leaders of tomorrow. To proactively build societal capacity to tackle these challenges, a wider reach of students need to become informed about and engaged in the deliberation and decision making at the UC. UC CNI SE fellows can play a key role in spanning the communication gap between students and administrators, faculty, staff and other campus stakeholders. Because relations between students and these groups are sometimes strained due to differences in values and the daily challenges they face, CNI SE fellows can be employed in a formal capacity to serve as boundary agents by communicating to and engaging their

6/27/2017

Impact on the Working Group

- **Stronger and more accurate** representation of varied perspectives in working group discussions
  - Student perspectives
  - Different UC campus perspectives
- **Broader** networks that have facilitated research and outreach opportunities
  - Data collection
  - Document review
  - [anticipated] Report dissemination
- **Unanticipated** working group products
  - Financial and energy strategy workshop materials
  - Recommendations for strengthening the UC-CNI Student Engagement fellows program
- **Creative** research directions + **expertise** to pursue them
  - Focus on role of student government in campus decision-making

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Creative Research Direction + Expertise

- Analysis to investigate **barriers to action by student government (specifically, passing and supporting resolutions)**:

  Target behavior:

  "Members of the undergraduate and graduate student governments across all ten University of California campuses pass and continually support (in committee and other ways) a coordinated resolution to the administration that demands a plan and accountability for campus energy sustainability."

- One student collaborator is involved in student government at her campus

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Impact on Student Collaborators

How have the students benefitted from participation?

6/27/2017

Impact on Student Collaborators

Deeper understanding of carbon neutrality

"I feel like I have a **way, way deeper knowledge** about…the Carbon Neutrality Initiative, in the UC system obviously, but just in general, like how do you actually implement that. I think from an outside perspective, it's so mysterious as to how this actually begins to work after you set this goal, so I feel like I actually get it now. **It sort of opened that black box**, so that was really interesting to see what happens after the goal is set and what is the actual mechanism to getting to the goal."

- Anna Whitney, UC-CNI Student Engagement Fellow, UC Berkeley

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Impact on Student Collaborators

Deeper understanding of UC carbon neutrality strategies

"I think there were specific ways in which the TomKat working group impacted my understanding of carbon neutrality...the worksheet that we went through, that process of **getting really definite about the strategies that we're actually going to use to reduce carbon emissions**...[and] how much carbon emissions will be reduced from each particular strategy, **and then the funding mechanisms as well**. Going through that, and talking through the pros and cons of each scenario with a sizable group of informed students was a really, really valuable thing for me, because with such a macroscopic high-level decision like that...it was really helpful to have people who had different perspectives... [and] provided **viewpoints that I would have never thought of on my own**, and definitely rounded out my understanding."

6/27/2017

- Austin Park, UC-CNI Student Engagement Fellow, UCLA

Impact on Student Collaborators

Understanding complexities of university decision-making

"... running student interviews has allowed me to realize somewhat the **lack of awareness that some students have** on what they think is possible or capable for administration to achieve."

"Before taking on this project, I thought that anyone who wanted to support any specific initiative would have the freedom to pursue it how they want, as long as others agreed with their vision. But after..., I realized that **students generally have the freedom to pursue a project as they wish**, but the success of it requires the strengths and support of having faculty and staff on their side...**faculty and staff have a lot more constraints to their ability to fully support a project**, whether it be for political reasons, financial reasons, or the risk of loosing their job, if the higher ups are not happy with their decision to pursue this specific initiative."

6/27/2017

- Celine Mol, TomKat intern, UC Santa Barbara

Impact on Student Collaborators

Insight into how decisions are made + weighing in

"You know, I think it's really important to give students the **ability to glimpse behind the curtain of the ivory tower, you know, to see the gears of power move** is such a valuable experience for students of all ages, professionality, degree-holding, not degree-holding. It just puts things into perspective, even if maybe they feel intimidated — I still feel intimidated — to have an opinion, **to voice up**, right? But just listening, just hearing how these people engage with one another is super interesting. It's a wonderful experience, I think, any student should have. **It's empowering**, you know, in a sense."

6/27/2017 *- Ben Sommerkorn, UC-CNI Student Engagement Fellow, UC Riverside & GCLC Grad Rep*

Impact on Student Collaborators

Understanding differences between campuses

"Participating in this project brought additional awareness of **how each campus heavily varies with campus culture and efforts for the initiative**."

- Colleen McCamy, UC-CNI Student Engagement Fellow, UC Santa Barbara

"I think considering the many sides of the story, **because each campus has its own [culture]**...like, Santa Cruz is more agriculture-based, San Francisco is more health-based. Participation in the project made me — it was holistic, I think. We took each campus into consideration — what was said, and sort of saw gaps — that allowed for **gaps to show between campuses and within campuses**...I think that was a real effective way of bettering or creating a successful communication campaign."

6/27/2017

- Marcelo Mendez, TomKat intern, UC Santa Barbara

Impact on Student Collaborators

Increased familiarity with research to inform engagement

"Definitely **barriers analysis** is a new system of thinking about stuff for me, and I found it really useful, and it made me challenge the way that I — like, **thinking about things, not assuming that you know what the problem is**, and wanting to do [barriers analysis] in more places..."

- Anna Whitney, UC-CNI Student Engagement Fellow, UC Berkeley

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Impact on Student Collaborators

Understanding theory & research related to own projects

"One thing that I really liked learning about was the **framing**...when we were doing the academic lit review, the aspect of that that I was talking about was framing and messaging and a lot of those articles are really interesting and put into words something that was kind of intuitive but difficult to explain or to put into practice...**understanding how the way that you're putting a message out there can completely change how it's received by people** who may ultimately agree with the more fundamental points but can still go either way if it's framed incorrectly for that audience."

- Hannah Campi, SEI intern, UC San Diego, former UC-CNI SE fellow, UC Riverside

6/27/2017

Impact on Student Collaborators

Helping to inform educational and career plans

"Much of my work on this project is new to me; I have not had the opportunity to study the manner in which we communicate such important topics as carbon neutrality. This experience has **opened my eyes to how research might be conducted in higher level academic settings** and is helping me determine what career I wish to pursue in future."

- Laura Hanel, SEI intern, UC Merced

6/27/2017

Impact on Student Collaborators

Multiple perspectives and feeling part of a team

"I liked being on the calls, I felt like I could learn a lot from people, like **stuff that I never would have been exposed to had I just been working by myself**, and even if it's not something that I end up working on, I feel like it's great to know what other people are doing. I think that [observing people working on a collaborative project] is one of the more enjoyable parts...what are you doing on your campus to engage your student body...that's very independent — so I really liked going on the calls and just getting the broader view of everything that's happening and, like, **I'm on a team — yay!**"

- Anna Whitney, UC-CNI Student Engagement Fellow, UC Berkeley

6/27/2017

Impact on Student Collaborators

Ability to share key insights with incoming CNI fellows

"I think the biggest thing I can think of was **training up next year's fellows**...who are going to fill in when I leave. I used a lot of the knowledge I learned from this meeting really, that had given me, I felt, **a more balanced perspective** on carbon neutrality and energy solutions and energy sustainability. I used that quite a bit both in terms of trying to demonstrate the **pros and cons of each approach and the capacities of each approach, and also like the ethical issues of different energy strategies**. Just from a knowledge perspective, I was much better informed and more able to act as a teacher and kind of bring up...the next round of fellows so that they could start from, hopefully, a higher place than I did, and just have that knowledge from the beginning. It was great."

- Austin Park, UC-CNI Student Engagement Fellow, UCLA

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So What?

- We saw positive outcomes for our project and our student collaborators.
- How can insights be applied to other efforts focused on engagement in sustainability?

6/27/2017

So What?

- We saw positive outcomes for our project and our student collaborators.
- How can insights be applied to other efforts focused on engagement in sustainability?

- An idea: **distributed research seminars**

6/27/2017

What is a distributed research seminar?

- Working within the structures and incentives of higher education
  - A seminar course that students can take for credit, coordinated across universities
  - An opportunity to train, mentor, organize (outreach) activities, etc., while at the same time working on a collaborative research project
  - Instructors coordinate and divide responsibility so that no one individual is responsible for preparing the course content
  - Creates a distributed structure for mentoring and capacity development
  - Students and instructors get credit for the course, making it easier for them to prioritize activities of the group

6/27/2017

Thank you!

I look forward to your questions and comments during the discussion.

6/27/2017

6.1.7. Student Government Barriers Analysis

1

BARRIERS ANALYSIS

Student Engagement in Carbon Neutrality and "Campus Energy Sustainability" across the University of California Campuses

Root Solutions
in partnership with
SSET of the TomKat Communication Strategy Working Group

2

This report was produced by Root Solutions and supported by the Synthesis and Student Engagement Team (SSET) of the TomKat Communication Strategy Working Group for University of California

Questions about this project can be directed to info@therootsolutions.org

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Overview

Root Solutions and the Synthesis and Student Engagement Team (SSET) of the TomKat Communication Strategy Working Group collaborated to conduct a determinants analysis to understand the barriers to student engaging in carbon neutrality and carbon reduction initiatives across the University of California campuses and what may influence them to do so.

Primary objectives

1. To understand the barriers and benefits to student engagement with carbon reduction initiatives across the University of California
2. For members of SSET to have the skills and tools necessary to conduct a barriers analysis on their own

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WHY A BARRIERS ANALYSIS?

When addressing human behavior there is the persuasive belief that increasing or changing knowledge will lead to a behavior change. Behavioral science has shown this to be incorrect—there are many reasons why someone would know what the desired behavior is and still not perform it. The Barrier Analysis process was designed to address this exact issue.

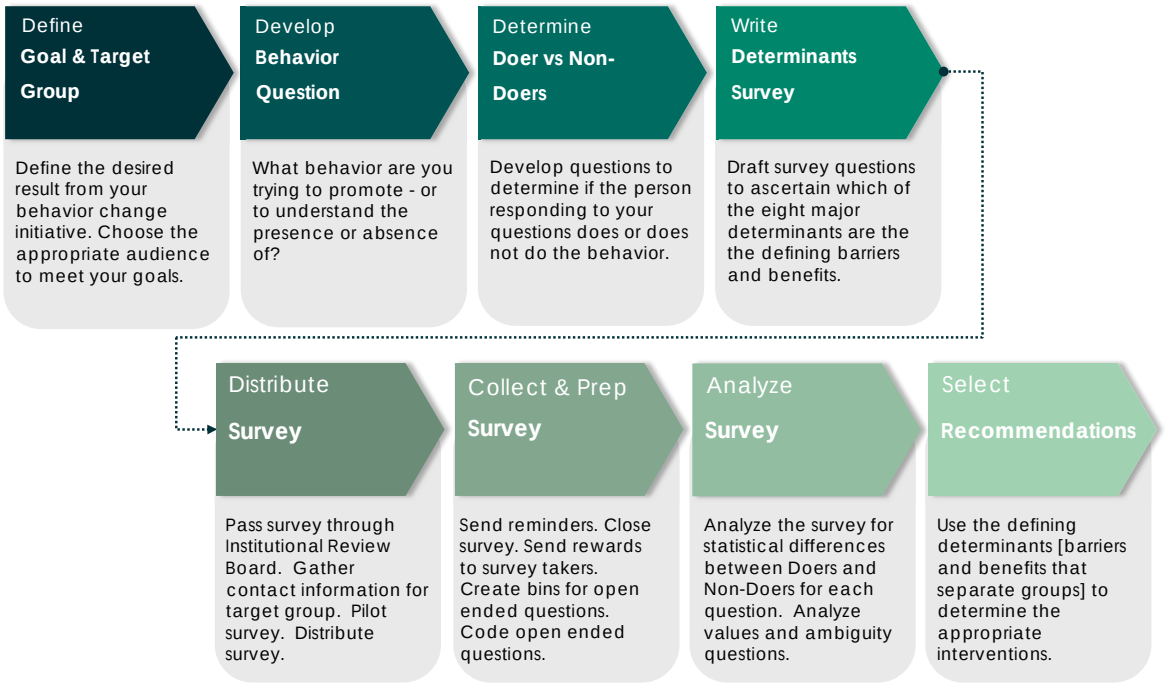
A Barrier Analysis is a rapid assessment tool used to identify behavioral determinants— the reason why someone does or does not do something—associated with a particular behavior to determine key messages and activities for intervention. Through a Barrier Analysis, participants are surveyed to identify the eight potential determinants (usually "barriers") that can block people from taking action. Survey questions also identify "benefits" or "promoters" - the positive attributes of an action that can be used to "sell" a behavior.

The individual responses to the determinants are also used to identify "Doers" and "Non-Doers." A Doer is an individual who performs the particular behavior and a Non-Doer is an individual who does not perform that behavior. By comparing the Doers and the Non-Doers it is possible to see what determinants are characteristic of each group; when Doers' responses are significantly different from Non-Doers', that element is very likely an important determinant of the behavior for the target group. Knowing those determinants provides a clear direction for developing effective behavior change communication messages, strategies and supporting activities.

Under the leadership of Root Solutions the Synthesis and Student Engagement Team (SSET) of the TomKat Communication Strategy Working Group assisted in conducting a barriers analysis to understand why students may not be engaging in carbon neutrality and carbon reduction initiatives across the University of California campuses and what may influence them to do so.

5

BARRIERS & BENEFITS ANALYSIS - STEPS



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BARRIERS & BENEFITS ANALYSIS

The Goal: The goal of the behavior was pre-determined by University of California's goal of carbon neutrality by 2025. An important aspect of achieving this is student engagement.

The Target Group: The SSET team is focused on students. Members of Student Government were identified as the ultimate target group due to their ability to pass coordinated resolutions across all UC campuses, which would signify to both administration and the student body that energy sustainability and carbon neutrality are topics to be prioritized. We included graduate students and also those at the University of California Student Association. Finally, we also included past members of student government because when we distributed our survey several groups were transitioning from the 2016-2017 legislature to the 2017-2018 legislatures; it was important to sample students that knew how to pass resolutions.

Surveys were sent to these University of California campuses:

- University of California Berkeley
- University of California Davis
- University of California Irvine
- University of California Los Angeles
- University of California Merced
- University of California Riverside
- University of California San Diego
- University of California San Francisco
- University of California Santa Barbara
- University of California Santa Cruz

BARRIERS & BENEFITS ANALYSIS

Develop **Behavior Statement** 7

The Behavior Statement should:

- Accomplish all or some of the goal
- Be written in a positive, present tense
- Include details of the behavior, such as the place, frequency and duration
- Be specific, measurable, and observable

Anna Whitney, one of the SSET team members, has been part of Student Government and provided valuable insight into how student government at University of California can effectuate change – passing resolutions. We included the need to coordinate across all campuses because it was determined that a coordinated resolution is more likely to garner attention and be taken seriously. We added a component about "supporting and committing time" because it was determined that merely passing a resolution wouldn't be sufficient if there were no follow-through.

Behavior Statement: [Support and commit time to a resolution - coordinated across all ten campuses - to the administration that calls for a plan and accountability for campus energy sustainability.]

The "Behavior Statement" is used in almost every question. For example: "Who approves of you [behavior]?" becomes "Who approves of you supporting and committing time to a resolution - coordinated across all ten campuses - to the administration that calls for a plan and accountability for campus energy sustainability?"

BARRIERS & BENEFITS ANALYSIS

Determine **Doer vs Non-Doers** 8

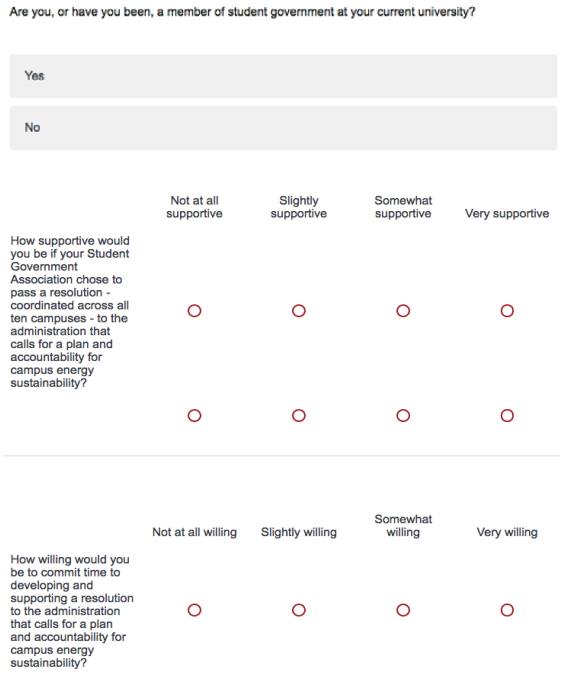
A Doer is an individual who performs (or would be willing to perform) the behavior and a Non-Doer is an individual who does not perform that behavior. By comparing Doers and Non-Doers it is possible to see what determinants are characteristic of each group; when Doers' responses are significantly different from Non-Doers', that element is very likely an important determinant of the behavior for the target group.

To compare those students who would be willing to [Support and commit time to a resolution - coordinated across all ten campuses - to the administration that calls for a plan and accountability for campus energy sustainability] – the desired behavior – and those who would not be willing, we developed three screening questions.

Individuals who answered no to the first question (are you a member of student government) did not qualify to take the survey.

Individuals who answered yes to the first question (are you a member of student government) and Somewhat Supportive/Willing or Very Supportive/Willing to **both** the second (how supportive would you be of a resolution) and third question (how willing would you be to commit time to developing and supporting a resolution) were Doers.

Individuals who answered yes to the first question (are you a member of student government) and Not at all Supportive/Willing or Slightly Supportive/Willing to **either** the second (how supportive would you be of a resolution) or third question (how willing would you be to commit time to developing and supporting a resolution) were Non-doers.



Write
Determinants
Survey
9

BARRIERS & BENEFITS ANALYSIS

Using the standard determinants of behavior as developed by Tom Davis in 1990, along with modifications made by Root Solutions, the SSET team and Root Solutions drafted survey questions to get at all the main barriers that keep people from acting and to understand the perceived benefits of action.

We did not include questions about divine will or about cues for action. We determined that concern about divine will was not a major determinant for behavior in the UC system. We decided not to include questions about cues because "remembering" didn't seem appropriate at the scale of a campus-wide-resolution, and we always recommend cues and prompts are used when possible, obviating the need to ask this question.

Perceived access
- Do I have access to the right people, products and services to do it?
- Do laws and regulations permit the behavior?
- Includes barriers related to geography, distance, language, race and gender.

Perceived action efficacy
- Would my action help?
- Would my action solve the problem?

Perceived negative attributes
- What are the reasons not to act?
- What are positive things resulting from inaction?

Perceived positive attributes
- What are the positive reasons to act?
- What are the negative things caused by inaction?

Perceived self efficacy
- Is it easy to do?
- Do I have the skills and knowledge to do it?
- Do I have the time to do it?
- Do I have the money and resources to do it?

Perceived severity
- Is this an important problem?
- Do I think the consequences are severe?

Perceived social acceptability
- Do I think others do it?
- Do others think I should do it?
- Would my family and friends disapprove if I do it?

Perceived susceptibility
- Does the problem impact me?

Write
Determinants
Survey
10

BARRIERS & BENEFITS ANALYSIS

Determinant:
Perceived Access

Do the following groups take into consideration student's desire to support and commit time to a resolution to the administration that calls for a plan and accountability for campus energy sustainability?

	No	Partially	Yes
Faculty	○	○	○
Department chairs	○	○	○
Deans	○	○	○
The Chancellors Offices	○	○	○
The Office of the President	○	○	○
Student Leaders	○	○	○
Other students on campus	○	○	○
Energy management staff	○	○	○
Development staff	○	○	○

What things are beyond your control that would need to change for you to support and commit time to a resolution that calls for a plan and accountability for campus energy sustainability?

Questions Listed: Q25, Q42

Write **Determinants Survey** 11

BARRIERS & BENEFITS ANALYSIS

Determinant:
Perceived Action Efficacy

If a resolution - coordinated across all ten campuses - to the administration that calls for a plan and accountability for campus energy sustainability were passed, would it help achieve energy sustainability on your campus?

- Yes, I think such a resolution would have a great impact on my campus' ability to achieve energy sustainability
- Yes, I think such a resolution would have a moderate or minor impact on my campus' ability to achieve energy sustainability
- No, I think such a resolution would have not have an impact on my campus' ability to achieve energy sustainability

Do you think passing a resolution would influence these groups to take action?

	No	Partially	Yes
Faculty	○	○	○
Department chairs	○	○	○
The Chancellors Offices	○	○	○
The Office of the President	○	○	○
Student Leaders	○	○	○
Other students on campus	○	○	○
Energy management staff	○	○	○
Development staff	○	○	○

What else would help achieve energy sustainability?

Questions Listed: Q16, Q24, Q17

Write **Determinants Survey** 12

BARRIERS & BENEFITS ANALYSIS

Determinant:
Perceived Negative Attributes

What is the worst thing that might happen if you support and commit time to a resolution - coordinated across all ten campuses - to the administration that calls for a plan and accountability for campus energy sustainability?

- My grades will drop due to the time taken away from studying
- I will have less time for professional endeavors such as work and internships
- I will have less time for social activities
- The administration might feel threatened and push back
- Other members of Student Government would disapprove
- Members of the student body would disapprove and I wouldn't be elected next term
- I wouldn't be able to devote time to an issue I care more about
- Friends or classmates would disapprove
- Other (please specify)

Questions Listed: Q40

Write **Determinants Survey** 13

BARRIERS & BENEFITS ANALYSIS

Determinant:
Perceived Positive Attributes

What do you see as personally beneficial or rewarding about supporting and committing time to a resolution - coordinated across all ten campuses - to the administration that calls for a plan and accountability for campus energy sustainability?

What are the things you like, or would like, about passing resolutions as part of the Student Government?

What is the worst thing that might happen if you support and commit time to a resolution - coordinated across all ten campuses - to the administration that calls for a plan and accountability for campus energy sustainability?

- My grades will drop due to the time taken away from studying
- I will have less time for professional endeavors such as work and internships
- I will have less time for social activities
- The administration might feel threatened and push back
- Other members of Student Government would disapprove
- Members of the student body would disapprove and I wouldn't be elected next term
- I wouldn't be able to devote time to an issue I care more about
- Friends or classmates would disapprove
- Other (please specify)

Questions Listed: Q7, Q39

Write **Determinants Survey** 14

BARRIERS & BENEFITS ANALYSIS

Determinant:
Perceived Self Efficacy

What would make it challenging for you to support and commit time to a resolution - coordinated across all ten campuses - to the administration that calls for a plan and accountability for campus energy sustainability?

How would you define or describe campus energy sustainability?

What would make it easy/easier for you to support and commit time to a resolution - coordinated across all ten campuses - to the administration that calls for a plan and accountability for campus energy sustainability?

Do you think you have the knowledge, resources & skills to support and commit time to a resolution that calls for a plan and accountability for campus energy sustainability?

- Yes
- No

Questions Listed: Q8, Q9, Q10, Q38

Write **Determinants Survey** 15

BARRIERS & BENEFITS ANALYSIS

Determinant: Perceived Self Efficacy

Are you currently, or have you ever been, involved in an environmental initiative on or off campus?

- Yes
- No

Have you been involved in passing a resolution?

- Yes
- No

Questions Listed: Q32, Q45

Write **Determinants Survey** 16

BARRIERS & BENEFITS ANALYSIS

Determinant: Perceived Severity

How serious would the following factors be if your campus does not make progress in energy sustainability?

	Not at all serious	Not very serious	Slight Serious	Moderately Serious	Very Serious
My campus would contribute to climate change	○	○	○	○	○
My campus would not be taking a leadership role on issues important to society	○	○	○	○	○
My campus would spend more money	○	○	○	○	○
My campus would spend less money	○	○	○	○	○
My campus would not be offering the possibility to its community to live a truly sustainable lifestyle	○	○	○	○	○
My campus would be going against its values	○	○	○	○	○
My campus would have less energy availability, and there would be an increased likelihood of blackouts	○	○	○	○	○
Other services would be diminished on my campus	○	○	○	○	○
My campus would be contributing to adverse impacts on already marginalized communities	○	○	○	○	○
There would be no consequences	○	○	○	○	○
We are already sustainable	○	○	○	○	○

Which of the above concerns is the most important consequence and why?

Please indicate your agreement or disagreement with the following statements:

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
It is the responsibility of your campus to provide sustainable energy on campus so that students can choose to live a sustainable lifestyle.	○	○	○	○	○

Questions Listed:Q21 (1), Q23, Q33

Write **Determinants Survey** 17

BARRIERS & BENEFITS ANALYSIS

Determinant:
Perceived Social Acceptability

Who are all the specific people (or groups) that would disapprove of you or your decision to support and commit time to a resolution - coordinated across all ten campuses - to the administration that calls for a plan and accountability for campus energy sustainability?

Who are all the specific people (or groups) that would approve of you or your decision to support and commit time to a resolution that calls for a plan and accountability for campus energy sustainability?

What percentage of student government members on your campus do you think support and are willing to commit time to a resolution - coordinated across all ten campuses - to the administration that calls for a plan and accountability for campus energy sustainability?

0 10 20 30 40 50 60 70 80 90 100

Estimated % of student government members who would support a resolution

Questions Listed: Q11, Q12, Q15

Write **Determinants Survey** 18

BARRIERS & BENEFITS ANALYSIS

Determinant:
Perceived Susceptibility

Please rank the following in order of who you think is most to least responsible for supporting and committing time to a resolution (or other similar initiatives) to the administration that calls for a plan and accountability for campus energy sustainability?

- Student leaders
- Other students on my campus
- Faculty
- Department chairs
- Deans
- The Chancellor's Offices
- The Office of the President
- Other individuals unaffiliated with the UC System
- Energy management staff

Please explain your first ranked choice.

If you support and commit time to a resolution to the administration that calls for a plan and accountability for campus energy sustainability how will this positively impact the campus community and your ability to choose to fully live a sustainable life?

Please indicate your agreement or disagreement with the following statements:

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
It is important for you, as a representative of UC students, to advocate for your campus to become energy sustainable?	○	○	○	○	○

Questions Listed: Q18, Q19, Q20, Q21(2)

Write **Determinants Survey** 19

BARRIERS & BENEFITS ANALYSIS

Other: Values

People have different values and priorities when it comes to making decisions. Thinking about your own personal values, how would you rate the following:

	Not at all important	Slightly important	Moderately important	Very important	Extremely important
Equality (equal opportunity for all)	○	○	○	○	○
Social power (control over others, dominance)	○	○	○	○	○
Wealth (material possessions, money)	○	○	○	○	○
Self-respect (belief in one's own worth)a	○	○	○	○	○
A world at peace (free of war and conflict)	○	○	○	○	○
Respect for tradition (preservation of time-honored customs)	○	○	○	○	○
Social recognition (respect, approval by others)	○	○	○	○	○
Unity with nature (fitting into nature)	○	○	○	○	○
Wisdom (a mature understanding of life)	○	○	○	○	○
Authority (the right to lead or command)	○	○	○	○	○
A world of beauty (beauty of nature and the arts)	○	○	○	○	○
Social justice (correcting injustice, care for the weak)	○	○	○	○	○
Broadminded (tolerant of different ideas and beliefs)	○	○	○	○	○
Preserving my public image (protecting my "face")	○	○	○	○	○

Questions Listed: Q34

Write **Determinants Survey** 20

BARRIERS & BENEFITS ANALYSIS

Other: Risk Tolerance

Many decisions involve an element of uncertainty. Thinking about your own preferences, please rate how well each statement describes your style of decision making:

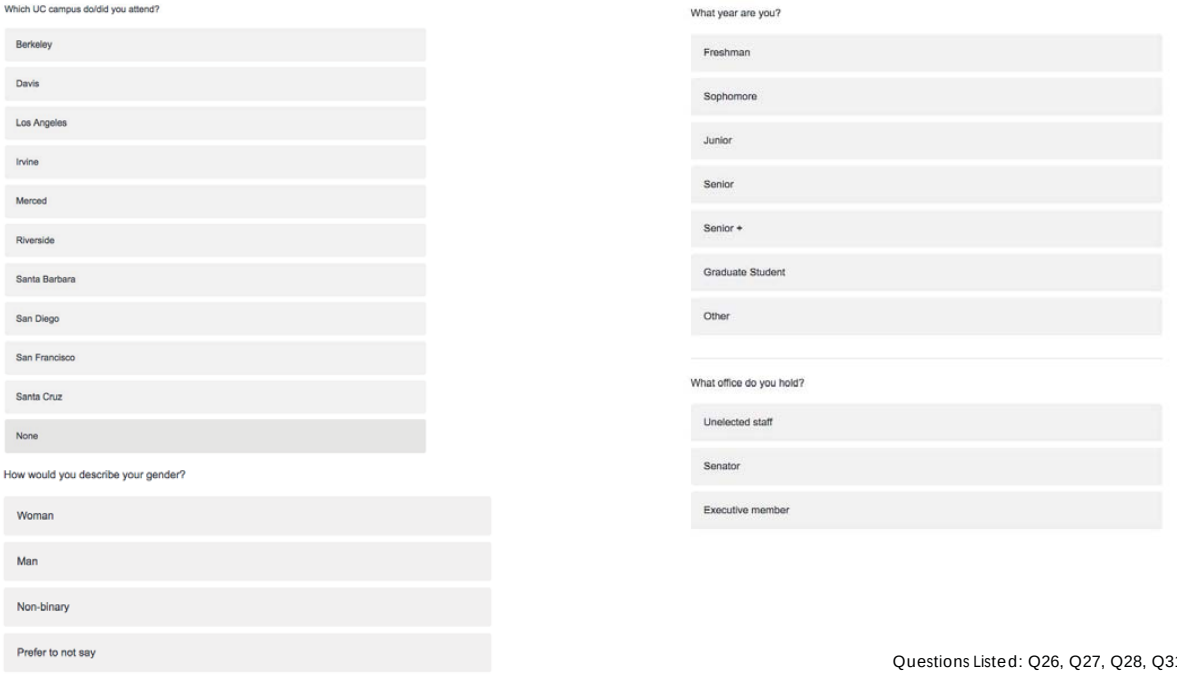
	Not at all well	Slightly well	Moderately well	Very well	Extremely well
I don't like situations that are uncertain	○	○	○	○	○
I dislike questions which could be answered in many different ways	○	○	○	○	○
I find that a well ordered life with regular hours suits my temperament.	○	○	○	○	○
When I have made a decision, I feel relieved.	○	○	○	○	○
I enjoy having a clear and structured mode of life.	○	○	○	○	○
I do not usually consult many different opinions before forming my own view.	○	○	○	○	○
I dislike unpredictable situations.	○	○	○	○	○

Questions Listed: Q35

Write
Determinants
Survey
21

BARRIERS & BENEFITS ANALYSIS

Other: Demographics



Questions Listed: Q26, Q27, Q28, Q31

Distribute
Survey
22

BARRIERS & BENEFITS ANALYSIS

We submitted the draft survey for IRB for review through University of California _____, and it was approved.

We collected student government emails off of each student government association's website.

During this step we determined that in order to protect student privacy, we needed to send out a survey link to the students via a list serve, rather than to sending emails directly to students' individual emails. We entered the survey into Qualtrics, and established a single link; Matto Mildenberger, a professor at University of California Santa Barbara, controlled the survey and access to emails.

Some members of student government offered to forward the survey to past years; in our email we also requested students forward it on.

Before sending out the survey, it was piloted amongst the TomKat Carbon Neutrality Initiative members; revisions were made based on feedback.

The survey went live on 27 July 2017 and was open through DATE.

BARRIERS & BENEFITS ANALYSIS

Distribute **Survey** 23

Introductory email with links to the survey:

Hello!

We are inviting you, as a student leader, to participate in a short online questionnaire to get your opinions about campus energy sustainability and a hypothetical resolution promoting such an initiative.

The survey should take 15-20 minutes and there will be a drawing for a $125 Amazon Gift card and three $25 Amazon gift cards – for current or former members of student government from University of California campuses taking the survey. To be entered into the drawing we must have your completed survey by August 4, 2017.

We are researchers from the University of California and from Root Solutions who work on issues related to strategic communication and community engagement. As part of a cross-campus working group on strategic communications related to the campus energy sustainability, we are evaluating a variety of perspectives from administrative leaders, staff, students, and faculty. This working group is supported in part by the TomKat Foundation.

It is important that we reach as many current and former members of student government as possible for our research; if you could forward this on to past members we would appreciate it and it will improve our results. Thank you in advance.

The responses to this questionnaire will be aggregated and de-identified so that no personal or identifying data will be reported. If you are willing to take the questionnaire, please click on the below link:

Follow this link to the Survey: (Not active: https://ucsbltsc.qualtrics.com/jfe/form/SV_86oHzTqVJvn6t8h?Q_CHL=email)

Or copy and paste the URL below into your internet browser: (Not active: https://ucsbltsc.qualtrics.com/jfe/form/SV_86oHzTqVJvn6t8h?Q_CHL=email)

Follow the link to opt out of future emails:

BARRIERS & BENEFITS ANALYSIS

Distribute **Survey** 24

Introduction to the survey:

Purpose
You are being asked to participate in a research study. The purpose of the study is to examine student leader opinions about campus energy sustainability. We are interested in getting the feedback and thoughts from student leaders about whether they would support a hypothetical resolution for energy sustainability.

We are researchers from the University of California and from Root Solutions who work on issues related to strategic communication and community engagement. As part of a cross-campus working group on strategic communications related to the campus energy sustainability, we are evaluating a variety of perspectives from administrative leaders, staff, students, and faculty. This working group is supported in part by the TomKat Foundation.

Procedures:
If you decide to participate by clicking "accept/continue" you will be taken to the online questionnaire. The responses to this questionnaire will be aggregated and de-identified so that no personal or identifying data will be reported. The purpose of this questionnaire is to get your thoughts and opinions about energy sustainability initiatives and a hypothetical resolution promoting such initiatives.

You can refuse to take part in this project and you can stop participating at any time. You can skip questions or refuse to complete any items in the questionnaire. Whether or not you participate will not affect your standing in any University of California group or organization. You have the right to receive a copy of this consent form.

The survey should take approximately 20 minutes to complete. We expect approximately 200 student leaders to complete the survey.

Benefits:
There are no direct benefits to subjects participating in this project. However, the survey is an opportunity for student leaders to share their thoughts and opinions about energy sustainability. It is also an opportunity to voice your opinion about how to make the University of California more sustainable.

Risks:
There are no anticipated risks to participating in this project.

Confidentiality:
Responses to the questionnaire will be aggregated and de-identified. We will not connect your responses to any identifying information such as your name or email address. Additionally, we will not report any identifying information about who participated in the survey.

Prize:
There will be a drawing for one $125 Amazon Gift card and three $25 Amazon Gift cards. If you wish, you may enter your email address at the end of the survey to enter into the drawing. (Your email address will only be used for the drawing of the gift card and will not be used to identify any of your responses to the questionnaire.)

Contact Information:
If you have questions about the research, you can email either Stacy Rebich Hespanha at hespanha@nceas.ucsb.edu or Matto Mildenberger at mildenberger@ucsb.edu.

If you have any questions regarding your rights as a research subject, please contact the Human Subjects Committee at (805) 893-3807 or hsc@research.ucsb.edu. Or write to the University of California, Human Subjects Committee, Office of Research, Santa Barbara, CA 93106-2050

Collect & Prep
Survey
25

BARRIERS & BENEFITS ANALYSIS

Two reminders were sent before the survey was closed and the results were collected on 11 August 2017.

We received 56 usable responses from across ten University of California campuses. In order to analyze and interpret the twelve open-ended questions, they needed to be coded. Coding is done by reviewing the open-ended responses and categorizing them into groups (bins) for analysis. Because coding is subject to the judgment and interpretation of the coder we assigned each question to two coders to code independently after which they compared answers to reach consensus. When they could not reach consensus, we had a tie breaker. There were multiple points in the coding process for ensuring all coders were on the same page and were performing their own cross-checks.

Specific steps:

1. Team members broke into groups of two and were each assigned two or more open-ended questions to code.
2. Each team individually read through the responses, and then grouped similar responses together, to become potential response categories. If a response included multiple topics, each topic warranted its own category
3. Team members compared their results with each other to reach consensus on the final potential response categories.
4. Stacy Rebich Hespanha reviewed all the potential response categories and refined them, creating clear definitions for each of the final code categories, also known as bins.
5. The teams individually revisited their open-ended questions, and coded them using the bins and definitions Stacy Rebich Hespanha had finalized. If a response included multiple topics, it would be coded into multiple bins
6. Team members compared their coding of responses to achieve consensus on the final bin designation for each question.
7. In cases where the team could not come to consensus, Hespanha was the final authority.
8. Additionally, Leah vonEhrenkrook and Nya Van Leuvan acted as third coder on several questions each.

Analyze
Survey
26

ANALYZE

Doer Non-Doer Qualifiers

Q2 Are you, or have you been, a member of student government at your current university? Qualtrics was set up to thank non-members for their time and then to lock them out of the rest of the survey. Therefore 100% of all usable responses are, or had been, members of student government at the University of California

Q5 How supportive would you be if your Student Government Association chose to pass a resolution—coordinated across all ten campuses—to the administration that calls for a plan and accountability for campus energy sustainability?

- **89% of Respondents Are Supportive**
- 15 Somewhat supportive
- 35 Very supportive

56 total respondents

- **11% of Respondents Are Not Supportive**
- 6 Slightly supportive
- 0 Not at all supportive

56 total respondents

Q6 How willing would you be to commit time to developing and supporting a resolution to the administration that calls for a plan and accountability for campus energy sustainability?

- **68% of Respondents Are Willing**
- 25 Somewhat willing
- 13 Very willing

56 total respondents

- **32% of Respondents Are Not Willing**
- 16 Slightly willing
- 2 Not at all willing

56 total respondents

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Determinant

Perceived Access

- Do I have access to the right people, products and services to do it?
- Do laws and regulations permit the behavior?
- Access barriers include barriers related to geography, distance, language, race and gender. For example, women might feel unsafe taking their composting to an alleyway compost collection dumpster; in this situation they perceive they do not have access to dispose of their compost if they did collect it.

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ANALYZE

Determinant: Perceived Access

Do the following groups take into consideration student's desire to support and commit time to a resolution to the administration that calls for a plan and accountability for campus energy sustainability? (Q25)

	DOERS			NON-DOERS		
Do you think the following groups take into account student's desire to [behavior]?	**No**	**Partially**	**Yes**	**No**	**Partially**	**Yes**
Student Leaders	0	7	27	2	7	10
Other students on campus	3	14	17	9	5	5
The Office of the President	7	17	10	5	8	6
The Chancellors Offices	8	16	10	3	12	4
Energy management staff	6	18	10	4	12	3
Deans	7	19	8	7	10	2
Faculty	9	17	8	8	10	1
Development staff	5	22	7	5	12	2
Department chairs	7	21	6	8	10	1

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ANALYZE

Determinant: Perceived Access

Do the following groups take into consideration student's desire to support and commit time to a resolution to the administration that calls for a plan and accountability for campus energy sustainability? (Q25)

Trend

Overall, respondents felt that the groups that take student's desire into consideration were 1) student leaders, 2) other students on campus, 3) the Office of the President, and 4) the Chancellor's Office. The groups they reported took consideration the least were 1) Faculty, 2) Department Chairs, 3) Deans, and 4) Development Staff

Determinant

Doers were more likely than Non-Doers to respond that student leaders and other students on campus took students' desires into account.

Preliminary Recommendation

Results suggest that a barrier for Non-Doers is the belief that their peers would not take into consideration their desire to engage in an energy sustainability initiative. It could be that they are unwilling to support this because they think they wouldn't get traction (a systems problem) or because they perceive lack of interest in this particular initiative from other student government members and the student body. To address the former, interview student government members to find out if their system is set up to provide support for any initiative; if so, communicate this. To address the latter, gather information of the level of support in the student body and share this along with results from this survey (66% of respondents indicated support).

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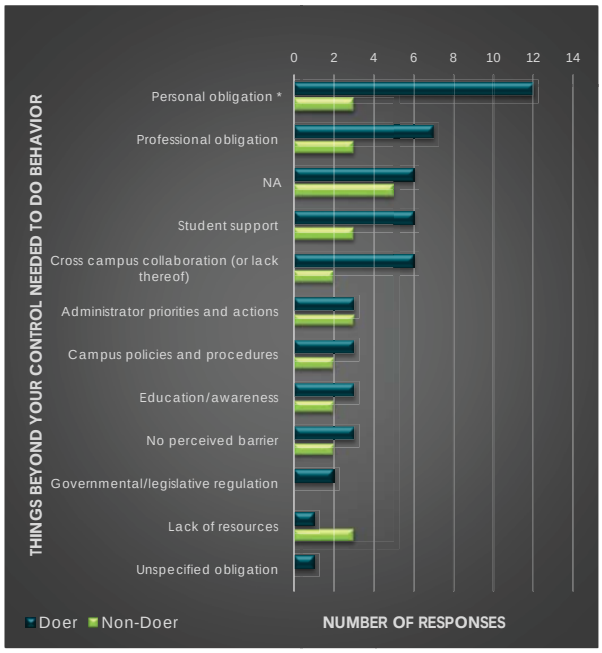
ANALYZE

Determinant: Perceived Access

What things are beyond your control that would need to change for you to support and commit time to a resolution that calls for a plan and accountability for campus energy sustainability? (Q42)



What are the things beyond your control you would need to do [behavior]	Doer	Non-Doer
Personal obligation *	12	3
Professional obligation	7	3
NA	6	5
Student support	6	3
Cross campus collaboration (or lack thereof)	6	2
Administrator priorities and actions	3	3
Campus policies and procedures	3	2
Education/awareness	3	2
No perceived barrier	3	2
Governmental/legislative regulation	2	0
Lack of resources	1	3
Unspecified obligation	1	0

ANALYZE

Determinant: Perceived Access

What things are beyond your control that would need to change for you to support and commit time to a resolution that calls for a plan and accountability for campus energy sustainability? (Q42)

Trend

Overall, respondents chose 1) personal obligation, 2) professional obligation and 3) student support.

Determinant

There was no difference between Doers and Non-Doers.

Preliminary Recommendation

Students are busy and one of the biggest barriers mentioned in this survey is a lack of time to devote to new activities. Opportunities for student leaders to be involved will be most successful if they become tied into their other responsibilities (homework, work study), have clear goals, are easy to contribute to, and take as small a time commitment as possible.

Both groups indicated that they would need support from other students to support and commit time to such a resolution. Survey students to find out how supportive they are and share these results. Are there student run green organizations that could provide support to student leaders?

ANALYZE

Determinant: Perceived Access

What things are beyond your control that would need to change for you to support and commit time to a resolution that calls for a plan and accountability for campus energy sustainability? (Q42)

	Description of Bins for: "What are the things beyond your control you would need to do [behavior]"
Administrator priorities and actions	Related to whether or not upper administrators (Chancellors and staff, Regents) are supportive of or prioritizes a particular action or program.
Campus policies and procedures	Related to campus policies and procedures such as budget allocation, rules and regulations related to sustainability-focused activities, etc.
Lack of resources	Related to the degree of financial, physical, or administrative support, and its lack thereof. Includes discussion of accessibility of meeting venues. Also includes discussion of funding availability and resistance to the idea of raising student fees to cover the costs.
Student support	Refers to garnering support from student peers, from either its direct or representational forms. Includes discussion of cohesion and competing priorities among students and student groups (including student government).
Education/ awareness	Related to the visibility/concreteness of the CNI, as well as the level of education (i.e. knowledge of sustainability) believed to be required for participation. Includes discussion of understanding/awareness, feasibility of proposed courses of action, and the desire for realistic goals and plans.

	Description of Bins for: "What are the things beyond your control you would need to do [behavior]"
Cross campus collaboration (or lack thereof)	Related to the degree that campuses would work together, communicate effectively, support each other, and make decisions collectively. Includes concern about power dynamics between larger and smaller campuses.
Governmental/ legislative regulation	Refers to conditions or changes coming from outside the university through local, state, federal, and international actions, policies and regulations.
Personal obligation	Related to time demands and prioritization of personal responsibilities (including health and wellness).
Professional obligation	Related to time demands and prioritization of coursework and other professional activities and responsibilities (including student government and other student organizations).
Unspecified obligation	Related to time demands and prioritization of other activities, but no information about whether professional or personal
No perceived barrier	Related to the perception that sees no opposing force.
NA	No answer provided. Includes 'not sure' and 'don't know' responses.

RECOMMENDATIONS

Determinant: Perceived Access

Both perceived lack of access and actual lack of access to the people, power, resources and services needed to perform a desired action or behavior are real barriers which must be overcome.

To overcome the **perception of lack of access**, Doers can play a large part in illustrating to Non-Doers that the existing access is better than they realize by sharing success stories and collaborating on new projects with Non-Doers. Both groups indicated that they would need support from other students to support and commit time to such a resolution. Survey students to find out how supportive they are and share these results. For example, results might reveal that 90% of students across campus would support the resolution.

Are there student-run green organizations that could provide support to student leaders? Individual student-run green organizations could also publicly express their support for such a resolution and their willingness to engage with student government on initiatives.

Results also suggest that a barrier for Non-Doers is the belief that their peers would not take into consideration their desire to engage in an energy sustainability initiative. It could be that they are unwilling to support this because they think they wouldn't get traction (a systems problem) or because they perceive lack of interest in this particular initiative from other student government members. To address this, interview student government members to find out if their system is set up to provide support for any initiative; if so, communicate this.

Actual lack of access is a barrier for both Doers and Non-Doers. Advocating for more student influence, developing platforms to build up leadership and access to power, skills-building, and creating relatively easy opportunities for students to make a difference are all recommended. Students are busy and one of the biggest barriers mentioned in this survey is a **lack of time** to devote to new activities.

Make the behavior as easy as possible: We need to make sure we are not asking students to make a change without first providing them the appropriate infrastructure with which to do so. Additionally, when we feel there are too many hoops to jump through in order to achieve a result, we are likely to avoid the action entirely. By limiting the amount of time and effort it takes to engage in a sustainability initiative, we can increase students' rate of participation and cooperation.

Opportunities for student leaders to be involved will be most successful if they are tied into their other responsibilities (homework, work study), have clear goals, are easy to contribute to, and take as small a time commitment as possible.

Determinant

Perceived Action Efficacy

Whether or not a person believes that the [behavior] works to mitigate or solve the problem. Generally when people feel an action does not work they will not perform the action. Additionally, people are more motivated when they can solve something, rather than only make headway.

- Would my action help mitigate the problem?
- Would my action solve the problem?

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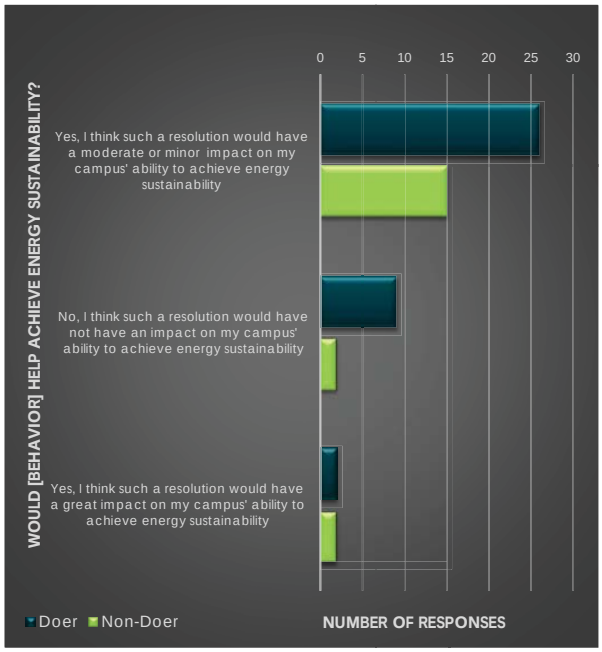
ANALYZE

Determinant: Perceived Action Efficacy

If a resolution—coordinated across all ten campuses—to the administration that calls for a plan and accountability for campus energy sustainability were passed, would it help achieve energy sustainability on your campus? (Q16)



Would [behavior] help achieve energy sustainability?	Doer	Non-Doer
Yes, I think such a resolution would have a moderate or minor impact on my campus' ability to achieve energy sustainability	26	15
No, I think such a resolution would have not have an impact on my campus' ability to achieve energy sustainability	9	2
Yes, I think such a resolution would have a great impact on my campus' ability to achieve energy sustainability	2	2

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ANALYZE

Determinant: Perceived Action Efficacy

If a resolution—coordinated across all ten campuses—to the administration that calls for a plan and accountability for campus energy sustainability were passed, would it help achieve energy sustainability on your campus? (Q16)

Trend

Overall, a majority of Doers and Non-Doers chose “Partially” as an answer.

Determinant

There is no difference between Doers and Non-Doers.

Preliminary Recommendation

Because of the cop-out nature of the ‘Partially’ answer, we gained little information from this question. It unfortunately tells us nothing about whether student believe there is action efficacy. In the future we recommend not giving respondents an easy way out like this.

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ANALYZE

Determinant: Perceived Action Efficacy

Do you think passing a resolution would influence these groups to take action? (Q24)

	DOERS			NON-DOERS		
Do you think [behavior] would influence these groups to take action?	**Doer No**	**Doer Partially**	**Doer Yes**	**Non-Doer No**	**Non-Doer Partially**	**Non-Doer Yes**
Student Leaders	1	7	28	2	5	11
Energy management staff	0	8	28	5	6	8
The Office of the President	1	16	19	3	8	8
The Chancellors Offices	3	16	17	3	11	5
Development staff	5	13	18	5	12	2
Other students on campus	5	19	12	10	5	4
Department chairs	9	19	8	7	9	3
Faculty	11	21	4	6	9	4

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ANALYZE

Determinant: Perceived Action Efficacy

Do you think passing a resolution would influence these groups to take action? (Q24)

Trend

Overall, respondents answered that passing a resolutions would influence 1) student leaders, 2) Energy Management Staff, 3) the Office of the President, 4) the Chancellor's Office and Development Staff. They said that passing a resolutions would not influence 1) Faculty, 2) Department Chairs and 3) other students on campus.

Determinant

Doers responded more frequently than Non-Doers that a resolution would influence Energy Management Staff, Development Staff and other students on campus.

Preliminary Recommendation

We should highlight collaborative activities and successful advocacy efforts targeting faculty, department chairs and other students.

If Faculty and Department Chairs have expressed (or feel) that a coordinated effort by numerous student government associations would influence them, this should be communicated to student leaders.

From this and other questions it appears that Doers have a greater sense of their impact and influence on other students (but still feel they could use more support to be successful). Follow up by finding out why they think this and ask them to message their positive perceptions to Non-Doers.

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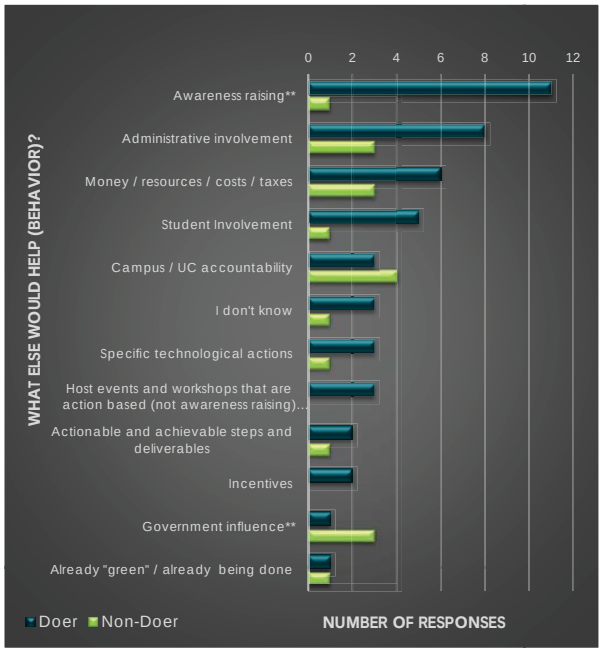
ANALYZE

Determinant: Perceived Action Efficacy

What else would help achieve energy sustainability? (Q17)



What else would help (behavior)?	Doer	Non-Doer
Awareness raising**	11	1
Administrative involvement	8	3
Money / resources / costs / taxes	6	3
Student Involvement	5	1
Campus / UC accountability	3	4
I don't know	3	1
Specific technological actions	3	1
Host events and workshops that are action based (not awareness raising) (actions or programs that lead to changes in behavior, interventions)	3	0
Actionable and achievable steps and deliverables	2	1
Incentives	2	0
Government influence**	1	3
Already "green" / already being done	1	1
Keeping track of current use, metering	1	1
Favorable energy agreements/contracts	1	0
Prioritize energy sustainability over environmental justice issues	1	0
Not this resolution	0	1

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ANALYZE

Determinant: Perceived Action Efficacy

What else would help achieve energy sustainability? (Q17)

Trend

When asked about other things (aside from a coordinated resolution) that would help to achieve energy sustainability, the most common responses were 1) activities to raise awareness, 2) involvement of campus administrators on the issue, 3) additional sources of resources/money or taxes that incentivize the desired changes, 4) campus or UC accountability, and 5) student involvement.

Determinants

Doers were significantly more likely to identify activities to raise awareness as something that would help achieve energy sustainability. Non-Doers, on the other hand, were more likely to identify government influence (either through legislation or providing resources) as important for helping to achieve energy sustainability.

Preliminary Recommendation

The results suggest that Doers believe that with the proper awareness and information (along with other interventions) stakeholders can work together to achieve energy sustainability while the Non-Doers tend to focus primarily on outside support (administrative involvement, funding, campus accountability and government influence). This a significant barrier, and a good opportunity for progress. If widespread student leadership involvement is desired, it will be important for Non-Doers to see this differently.

Engage Doers to message to Non-Doers that progress can be made regardless of external support.
Planning a small and easy win to show Non-Doers that ground up involvement can make a difference can provide proof of concept.

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ANALYZE

Determinant: Perceived Action Efficacy

What else would help achieve energy sustainability? (Q17)

	Description of Bins for: "What else would help (behavior)?"
Administrative involvement	Refers to the need for campus administration to support energy sustainability; includes mention of the 'campus' or 'university' doing something or taking some action.
Already "green" / Already being done	The campus is already sustainable or is taking measures in that direction
Awareness raising	Refers to the need for events, information or "how to guidance" that illustrate the problem and solutions; includes mention of need for knowledge, teaching, learning, marketing.
Campus / UC accountability	
I don't know	
Money / resources / costs / taxes	Refers to the need for money and resources for research, changes to infrastructure and implementation of energy sustainability efforts; includes mention of cost, fundraising, financial incentives, 'government help'.
Student Involvement	Refers to the need for students to engage in energy sustainability; Includes any mention of action by students or involvement of students in any way.
Government influence	Refers to the need for state or federal laws and/or support

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ANALYZE

Determinant: Perceived Action Efficacy

What else would help achieve energy sustainability? (Q17)

	Description of Bins for: "What else would help (behavior)?"
Keeping track of current use, metering	Refers to the need to track energy use or perform energy accounting. Includes mention of installation and/or use of metering systems.
Actionable and achievable steps and deliverables	Refers to mention of the need for discrete, practical steps and attainable goals that would help campuses move toward energy sustainability
Specific technological actions	Refers to specific actions campuses can take, such as installing solar, investing in technology and renewables, or changing dorm lighting
Host events and workshops that lead to one time or continuous changes in behavior	Refers to specific events campuses can host such as a trash pick up events; includes action based events but not awareness raising events
Prioritize energy sustainability over environmental justice issues	
Not this resolution	Refers to someone specifying they don't think the type of resolution referred to in this survey is not the answer
Incentives	Refers to the need to provide incentives to campus stakeholders or the campuses themselves
Favorable energy agreements/contracts	
Research	
No Answer	

RECOMMENDATIONS

Determinant: Perceived Action Efficacy

Both **perceived lack of action efficacy** (will the action mitigate, or solve the problem?) and **actual lack action efficacy** are barriers which must be overcome.

Non-Doers in this survey expressed that they have stronger confidence in external support than their own ability to affect change, while Doers had stronger confidence in their own influence. However, both groups expressed that they didn't feel their actions would influence many of the decision makers or make significant contributions toward energy efficiency.

Emphasize hopefulness: Hopelessness leads to avoidance and inaction. In order to feel motivated, we need to be confident that we have the ability to positively affect our planet and that our efforts actually make a difference. If students don't think their actions will make a difference in improving energy efficiency, they are less likely to take action at all.

Highlight solutions and momentum: Since Doers have stronger confidence in their own influence, it is important that they share this perspective with the Non-Doers through collaborative programs, sharing success stories and by demonstrating small wins. Sharing success stories helps people see that a solution already has some forward momentum, and that they have the power to add to it.

Make it a collective endeavor: To overcome the belief by both groups that students have limited impact on decision makers, create broad-based programs involving students, administration and faculty, bringing attention to student driven energy sustainability programs, and increasing student oversight authority over sustainability initiatives. Being a part of a group increases our sense of impact. Our sense of impact in turn influences our motivation to act on a particular issue. When framing our efforts, make the problem an issue faced by "us" rather than "you."

Scale appropriately and provide positive feedback: To address students' feelings that their actions do not make significant contributions toward energy efficiency, frame the problem on a relevant scale, and provide feedback to students on the impact their contributions (or those of student leaders that have recently cycled out). For example, administrators can provide students with monthly feedback on how many pounds of food waste students have avoided sending to a local landfill, rather than a more abstract metric like pounds of CO_2 avoided.

Determinant

Perceived Negative Attributes

The negative things a person thinks will happen as a result of performing the [behavior]. Responses may reveal disadvantages and attitudes about the [behavior].

- What are the reasons not to act?
- What are positive things resulting from inaction?

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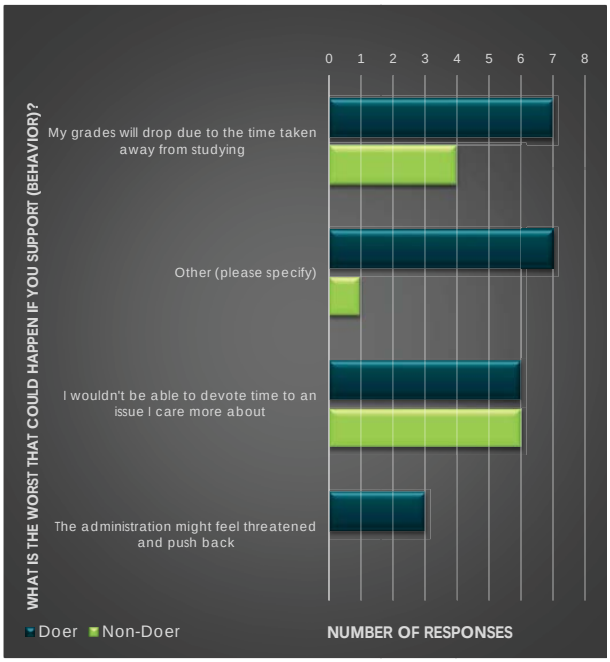
ANALYZE

Determinant: Perceived Negative Attributes

What is the worst thing that might happen if you support and commit time to a resolution—coordinated across all ten campuses—to the administration that calls for a plan and accountability for campus energy sustainability? (Q40)



What is the worst thing that might happen if you support (behavior)?	Doer	Non-Doer
My grades will drop due to the time taken away from studying	7	4
Other (please specify)	7	1
I wouldn't be able to devote time to an issue I care more about	6	6
The administration might feel threatened and push back	3	0

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ANALYZE

Determinant: Perceived Negative Attributes

What is the worst thing that might happen if you support and commit time to a resolution—coordinated across all ten campuses—to the administration that calls for a plan and accountability for campus energy sustainability? (Q40)

Trend

Overall, respondents chose 1) I wouldn't be able to devote time to an issue I care more about and 2) My grades will drop due to the time taken away from studying.

Determinants

There was no difference between Doers and Non-Doers.

Preliminary Recommendations

Time is a precious commodity for students, and they are concerned about making big commitments to a sustainable energy program. As much as possible, opportunities should be given to students to make meaningful contributions to the program with little time commitment. For those students who choose to devote more time there should be a clear roadmap for them to increase their involvement, but for many students a relatively short commitment will be the most appealing.

Engage willing Faculty to include energy sustainability initiatives into their coursework.

Piggyback environmental initiatives onto other initiatives - for example can social justice indicatives include an environmental component?

RECOMMENDATIONS

Determinant: Perceived Negative Attributes

Time is a precious commodity for students, and they are concerned about making big commitments to a sustainable energy program. As much as possible, opportunities should be given to students to make meaningful contributions to the program with little time commitment. For those students who choose to devote more time there should be a clear roadmap for them to increase their involvement, but for many students a relatively short commitment will be the most appealing.

Make it easy: Given students' busy schedules, it is important to make the behavior as easy as possible**.** Any kind of barrier to action, whether mental or physical, discourages us from a behavior. "Make it easy" involves removing barriers to desired actions and erecting barriers to deleterious actions, while employing defaults to promote favorable actions.

Reduce hassle factors: When we feel there are too many hoops to jump through in order to achieve a result, we are likely to avoid the action entirely. By limiting the amount of time and effort it takes to engage in a sustainability initiative, we can increase students' rate of participation and cooperation.

Students worry about sustainability initiatives taking time away from their coursework. Engaging willing Faculty to include energy sustainability initiatives into their coursework can help address this problem.

Student groups can also increase participation by combining environmental initiatives with other initiatives. For example, social justice initiatives could include an environmental component (and vice versa).

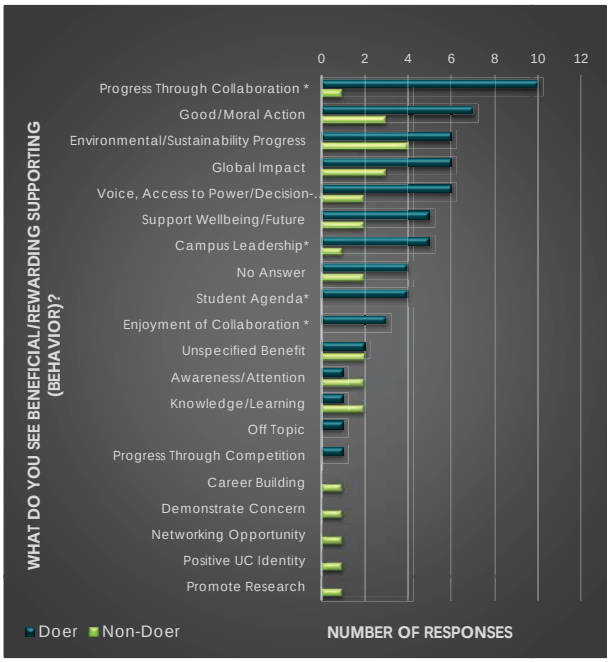
Determinant

Perceived Positive Attributes

ANALYZE

Determinant: Perceived Positive Attributes

What do you see as personally beneficial or rewarding about supporting and committing time to a resolution—coordinated across all ten campuses—to the administration that calls for a plan and accountability for campus energy sustainability? (Q7)



What do you see as beneficial or rewarding about supporting (behavior)?	Doer	Non-Doer
Progress Through Collaboration *	10	1
Good/Moral Action	7	3
Environmental/Sustainability Progress	6	4
Global Impact	6	3
Voice, Access to Power/Decision-Makers	6	2
Support Wellbeing/Future	5	2
Campus Leadership*	5	1
No Answer	4	2
Student Agenda*	4	0
Enjoyment of Collaboration *	3	0
Unspecified Benefit	2	2
Awareness/Attention	1	2
Knowledge/Learning	1	2
Off Topic	1	0
Progress Through Competition	1	0
Career Building	0	1
Demonstrate Concern	0	1
Networking Opportunity	0	1
Positive UC Identity	0	1
Promote Research	0	1

ANALYZE

Determinant: Perceived Positive Attributes

What do you see as personally beneficial or rewarding about supporting and committing time to a resolution—coordinated across all ten campuses—to the administration that calls for a plan and accountability for campus energy sustainability? (Q7)

Trend

Overall, respondents thought that a resolution could results in benefits related to 1) making more progress through collaboration, 2) making progress on environmental/sustainability issues, 3) taking actions that are good or moral, 4) taking actions that have global impact, 4) having a voice on the issue (or access to power or decision-makers), 5) taking actions that support wellbeing, and 6) demonstrating campus leadership.

Determinants

Doers were significantly more likely to report anticipated benefits related to collaboration (both increased ability to make progress through collaboration and enjoyment of the collaboration). Doers were also significantly more likely to identify a leadership role for the campus and advancing the student agenda as important benefits.

Recommendations

Messaging to student body leaders should emphasize the benefits identified by the Doers, including opportunities for collaboration and for the campus to take a leadership role. Those that are more driven by self enhancement values may be motivated more by the status the UC system would have if it became a model for energy sustainability or carbon neutrality.

Any opportunities to amplify the benefits identified by Doers and Non-Doers should be taken.

ANALYZE

Determinant: Perceived Positive Attributes

What do you see as personally beneficial or rewarding about supporting and committing time to a resolution—coordinated across all ten campuses—to the administration that calls for a plan and accountability for campus energy sustainability? (Q7)

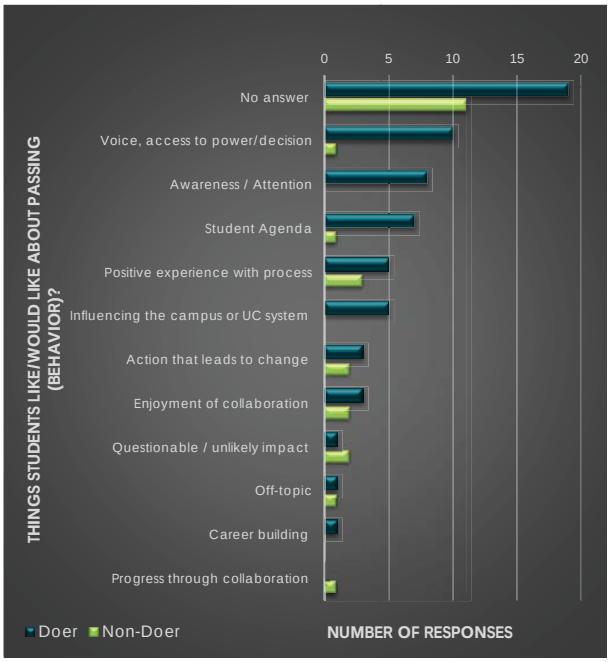
	Description of Bins for: "What do you see as beneficial or rewarding about supporting (behavior)?"
No answer	No answer was provided by the respondent.
Off topic	Response provided was off topic and did not address the question or topic.
Voice, access to power / decision-makers	Refers to an opportunity to make voice heard or have access to power/decision-makers.
Networking opportunity	Refers to an opportunity for peer networking.
Environmental / sustainability progress	Refers to an opportunity to progress toward an environmental/sustainability goal.
Knowledge / learning	Refers to an opportunity to learn or acquire knowledge.
Awareness / attention	Refers to an opportunity to bring attention to issue considered important or meaningful.
Good/moral action	Refers to an opportunity to do an altruistic/good/moral/ethical thing.
Enjoyment of collaboration	Refers to an opportunity to gain personal benefit or enjoyment through collaboration.
Progress through collaboration	Refers to an opportunity for more progress through collaboration.
Progress through competition	Refers to an opportunity for more progress through competition.

	Description of Bins for: "What do you see as beneficial or rewarding about supporting (behavior)?"
Support wellbeing / future	Refers to an opportunity to increase human wellbeing/support future generations; includes mention of economic benefits.
Global impact	Refers to an opportunity to have impact on a global scale.
Career building	Refers to an opportunity for career building.
Demonstrates concern	Refers to an opportunity to demonstrate concern.
Campus leadership	Refers to an opportunity to demonstrate leadership as a campus/university system
Student agenda	Refers to an opportunity to support fellow students and advance student agenda. Includes discussion of duty student reps have to represent and achieve benefits for their constituents.
Promote research	Mentions research and/or development as a benefit.
Positive UC identity	Mentions opportunity to think or feel positively about the UC system and campuses.
Unspecified benefit	Refers to an unspecified benefit (not clear whether environment, or humans, or both). Includes generic statements such as "it would be cool..."

ANALYZE

Determinant: Perceived Positive Attributes

What are the things you like, or would like, about passing resolutions as part of the Student Government? (Q39)



Things students like or would like about passing (behavior)?	Doer	Non-Doer
No answer	19	11
Voice, access to power/decision	10	1
Awareness / Attention	8	0
Student Agenda	7	1
Positive experience with process	5	3
Influencing the campus or UC system	5	0
Action that leads to change	3	2
Enjoyment of collaboration	3	2
Questionable / unlikely impact	1	2
Off-topic	1	1
Career building	1	0
Progress through collaboration	0	1

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ANALYZE

Determinant: Perceived Positive Attributes

What are the things you like, or would like, about passing resolutions as part of the Student Government? (Q39)

Trend

Overall, respondents chose 1) no answer, 2) voice, access to power/decision, 3) student agenda, 4) positive experience with process, and 5) awareness/attention.

Determinants

Determinants: Doers were more likely than Non-Doers to choose voice, access to power/decision, awareness/attention (refers to an opportunity to bring attention to an issue that respondent considers important or meaningful) and influencing the campus or UC system.

Recommendations

Create messaging that highlights the voice students will have, their access or power, the opportunity to influence the campus or UC system by working on such an initiative.

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ANALYZE

Determinant: Perceived Positive Attributes

What are the things you like, or would like, about passing resolutions as part of the Student Government? (Q39)

	Description of Bins for: "Things students like or would like about passing (behavior)?"
Student agenda	Refers to an opportunity to support fellow students and advance the student agenda. Includes discussion of duty student reps have to represent and achieve benefits for their constituents.
Positive experience with process	Refers to a positive experience of the process of developing and passing a resolution. Includes description of process as straightforward, quick and efficient, and mentions participating in discussion and civil debate. Includes opportunities to communicate about shared values.
Questionable / unlikely impact	Describes impact of resolutions as unlikely, minor, or ineffective.
Action that leads to change	Refers to an opportunity to take action that leads to change/results.
Voice, access to power / decision-makers	Refers to an opportunity to make voice heard or have access to power/decision-makers.
Career building	Refers to an opportunity for career building, professional development or experience.

	Description of Bins for: "Things students like or would like about passing (behavior)?"
Awareness / attention	Refers to an opportunity to bring attention to an issue that respondent considers important or meaningful.
Enjoyment of collaboration	refers to an opportunity to gain personal benefit or enjoyment through collaboration.
Progress through collaboration	Refers to an opportunity for more progress through collaboration.
Off-topic	Response provided was off topic and did not address the question or topic.
No answer	No answer was provided by the respondent.

RECOMMENDATIONS

Determinant: Perceived Positive Attributes

There are many benefits that students might gain from being involved in promoting sustainable energy on their campus. Doers more strongly identified benefits associated with having a voice, access to power, doing collaborative work, gaining leadership skills, the opportunity to influence the campus and helping the campus take on the role of sustainability leader than Non-Doers. Those that are more driven by self enhancement values may be motivated more by access to power, gaining leadership skills, and the status the UC system would have if it became a model for energy sustainability or carbon neutrality.

Emphasize benefits: Environmentalists have long understood the value of rewarding positive environmental behaviors or penalizing detrimental behaviors. By attaching benefits or disincentives to specific behaviors - or behavioral outcomes - we can catalyze action or help reinvigorate pre-established goals.

Directly relate behaviors to benefits that different segments of the student population care about: For example, messaging to all student body leaders should emphasize the benefits identified by the Doers, such as the opportunity to gain leadership skills. For students more driven by status, emphasize the benefits of having their organization shine as a model of sustainability on campus. To make benefits more tangible and immediate, student government could also facilitate competitions for the "most sustainable" student organization on campus.

Build off of existing goals and behaviors: Tie rewards to goals already held by the audience. For example, if students care about leadership skill development, add skill development components to energy sustainability measures and market to students using the goals your audience articulated [e.g., leadership development].

Determinant

Perceived Self Efficacy

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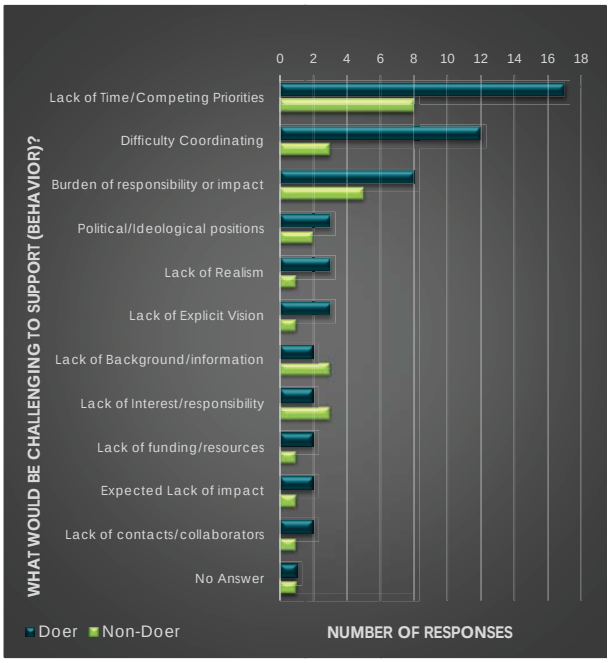
ANALYZE

Determinant: Perceived Self Efficacy

What would make it challenging for you to support and commit time to a resolution—coordinated across all ten campuses—to the administration that calls for a plan and accountability for campus energy sustainability? (Q8)



What would be challenging for you to support and commit to (behavior)?	Doer	Non-Doer
Lack of Time/Competing Priorities	17	8
Difficulty Coordinating	12	3
Burden of responsibility or impact	8	5
Political/Ideological positions	3	2
Lack of Realism	3	1
Lack of Explicit Vision	3	1
Lack of Background/information	2	3
Lack of Interest/responsibility	2	3
Lack of funding/resources	2	1
Expected Lack of impact	2	1
Lack of contacts/collaborators	2	1
No Answer	1	1
Lack of Personal Benefit	0	2
None	0	1

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ANALYZE

Determinant: Perceived Self Efficacy

What would make it challenging for you to support and commit time to a resolution—coordinated across all ten campuses—to the administration that calls for a plan and accountability for campus energy sustainability? (Q8)

Trend

Overall, respondents found that the greatest challenges to committing to a resolution were 1) lack of time and/or competing priorities and 2) difficulty coordinating such an effort.

Determinants

There were no significant differences between Doers and Non-Doers.

Recommendations

Create platforms to facilitate coordination.

Time is a precious commodity for students, and they are concerned about making big commitments to a sustainable energy program. As much as possible, opportunities should be given to students to make meaningful contributions to the program with little time commitment. Opportunities for them to be involved will be most successful if they become tied into their other responsibilities (homework, work study), have clear goals, are easy to contribute to, and take as small a time commitment as possible. For those students who choose to devote more time there should be a clear roadmap for them to increase their involvement, but for many students a relatively short commitment will be the most appealing.

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ANALYZE

Determinant: Perceived Self Efficacy

What would make it challenging for you to support and commit time to a resolution—coordinated across all ten campuses—to the administration that calls for a plan and accountability for campus energy sustainability? (Q8)

	Description of Bins for: "What would be challenging for you to support and commit to (behavior)?"
Time / competing priorities	Refers to a lack of time/energy to commit and/or a competing commitment to other priorities. Includes mention of the time consuming nature of the process and specific tasks such as research and drafting.
Difficulties coordinating	Refers to difficulties coordinating and making decisions with other campuses or individuals. Difficulties may be logistical, or may arise due to differences in issues, needs, vision, goals, messages, etc. Includes mention of lack of ownership and concerns that coordinated solutions may prevent local solutions or actions.
Lack of funding / resources	Refers to lack of funding or other resources.
Lack of realism	Refers to lack of realism or pragmatism.
Political / ideological positions	Refers to challenges that arise due to political or ideological positions and/or lack of political or ideological diversity.
Expected lack of impact	Describes a lack of expected impact, viability, or tangible outcome.
Lack of contacts / collaborators	Refers to a lack of contacts or other students who are willing to dedicate to the effort.

	Description of Bins for: "What would be challenging for you to support and commit to (behavior)?"
Lack of background / information	Refers to a lack of necessary background/knowledge/skills/information.
Lack of explicit vision	Refers to a lack of communication/implementation of clear, tangible, and explicit vision, goals, plans, timeline, tasks, time commitment and/or system for accountability.
Lack of interest / responsibility	Identifies a lack of interest in and/or responsibility for this type of issue.
Lack of personal benefit	Indicates a perceived lack of personal career benefit through participating in such an effort.
Burden of responsibility or impact	Refers to (the possibility of) burdening students or other campus constituencies with responsibility or negative impacts (e.g., costs or restrictions).
None	Answers question, but indicates 'none', etc.

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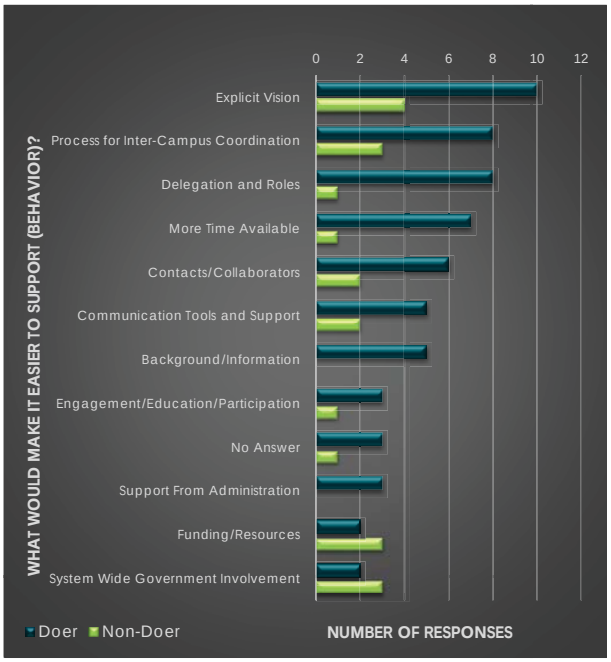
ANALYZE

Determinant: Perceived Self Efficacy

What would make it easy/easier for you to support and commit time to a resolution—coordinated across all ten campuses—to the administration that calls for a plan and accountability for campus energy sustainability? (Q9)



What would make it easier for you to support and commit to (behavior)?	**Doer**	**Non-Doer**
Explicit Vision	10	4
Process for Inter-Campus Coordination	8	3
Delegation and Roles	8	1
More Time Available	7	1
Contacts/Collaborators	6	2
Communication Tools and Support	5	2
Background/Information	5	0
Engagement/Education/Participation	3	1
No Answer	3	1
Support From Administration	3	0
Funding/Resources	2	3
System Wide Government Involvement	2	3
Minimal Time Required	1	1
Broader Sustainability Platform	1	0
Realism	0	2
Political/Ideological Diversity	0	2
Expected Impact	0	1
Don't Know	0	1
N/A	0	0
Off-Topic	0	0

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ANALYZE

Determinant: Perceived Self Efficacy

What would make it easy/easier for you to support and commit time to a resolution—coordinated across all ten campuses—to the administration that calls for a plan and accountability for campus energy sustainability? (Q9)

Trend

Overall, respondents thought that it would be easier for them to support and commit time to a resolution if there were 1) a clear and explicit vision for the initiative, 2) a good process for inter-campus collaboration, 3) a well-organized delegation of roles and responsibilities, 4) more time to contribute, 5) the necessary contacts and collaborators, and 6) appropriate communication tools and support for the effort.

Determinants

Doers were significantly more likely to identify the need for a stronger background or more information about the issue.

Recommendations

Any opportunities to make working on campus energy sustainability easier, such as creating an explicit vision, a roadmap to get there, a delegation of roles and responsibilities, collaborators and tools to collaborate, as identified by Doers and Non-Doers, should be taken. *Focus* on helping create systems for collaboration, creating a clear and explicit vision, and providing the necessary information. Student leaders expressed there is a "lack of information on how other campuses work towards these goals" and a desire to have workshops on campus sustainability. Workshop and events should emphasize solutions and information on how to solve problems.

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ANALYZE

Determinant: Perceived Self Efficacy

What would make it easy/easier for you to support and commit time to a resolution—coordinated across all ten campuses—to the administration that calls for a plan and accountability for campus energy sustainability? (Q9)

	Description of Bins for: "What would make it easier for you to support and commit to (behavior)?"
More time available	Refers to mention of more time/energy to commit to working on a resolution.
Minimal time required	Refers to need for involvement to require minimal time/energy commitment.
Process for inter-campus coordination	Refers to or describes a process that recognizes and works to overcome difficulties in coordinating and making decisions with other campuses or individuals. Difficulties overcome may be logistical, or may arise due to differences in issues, needs, vision, goals, message, etc. Includes mention of adapting ideas or plans to fit the needs of individual campuses.
Communication tools and support	Refers to communication tools and support (e.g., facilitation, in-person and/or virtual meetings). Such tools include those that support cross-campus interactions and coordination.
Funding/ resources	Refers to funding or other resources.
Realism	Refers to realism or pragmatism.
Political/ ideological diversity	Refers to the elimination of challenges that arise due to political or ideological positions. Includes encouragement of political and ideological diversity.

	Description of Bins for: "What would make it easier for you to support and commit to (behavior)?"
Expected impact	Describes an expectation of impact, viability, or tangible outcome.
Contacts/ collaborators	Refers to contacts or other students who are willing to dedicate to the effort.
Background/information	Refers to access to necessary background/knowledge/skills/information. Includes mention of opportunities to evaluate problem status or progress.
Explicit vision	Refers to communication/implementation of clear, tangible, and explicit vision, goals, plans, timeline, tasks, time commitment and/or system for accountability. Includes mention of utilizing best practices.
Support from administration	Refers to support from campus upper administration.
Delegation and roles	Refers to task delegation and shared workload and/or specialized roles for people working on and/or supporting the resolution. Includes mention of trust in collaborators/leaders of the effort.

ANALYZE

Determinant: Perceived Self Efficacy

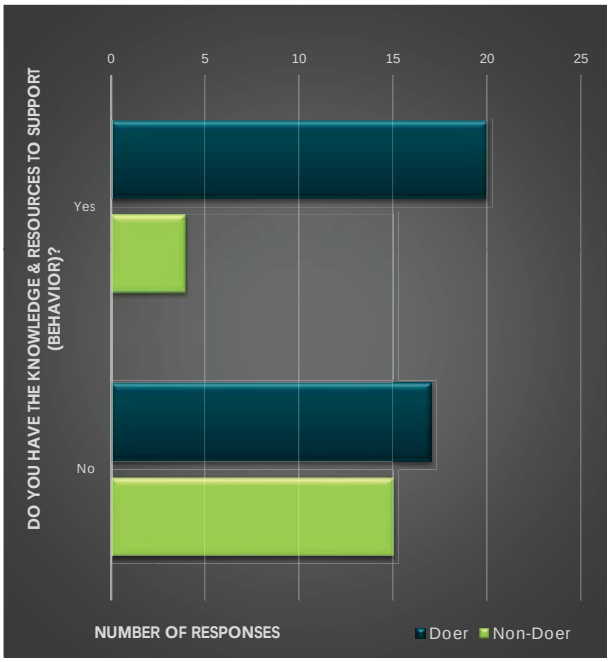
What would make it easy/easier for you to support and commit time to a resolution—coordinated across all ten campuses—to the administration that calls for a plan and accountability for campus energy sustainability? (Q9)

	Description of Bins for: "What would make it easier for you to support and commit to (behavior)?"
Engagement/ education/ participation	Refers to efforts that involve engagement, education and/or active participation of the student body and/or the public
Systemwide government involvement	Mentions involvement of systemwide student government (e.g., UCSA and/or Council of Presidents).
Broader sustainability platform	Mentions pursuit of energy sustainability as part of a broader sustainability platform.
Don't know	Respondent indicates 'don't know' or something to that effect.
NA	Respondent indicated 'NA' or 'not available' or something to that effect.
Off-topic	Respondent provided a response that was off-topic.

ANALYZE

Determinant: Perceived Self Efficacy

Do you think you have the knowledge, resources & skills to support and commit time to a resolution that calls for a plan and accountability for campus energy sustainability? (Q10)



Do you think you have the knowledge, resources, & skills to support (behavior)?	**Doer**	**Non-Doer**
Yes	20	4
No	17	15

ANALYZE

Determinant: Perceived Self Efficacy

Do you think you have the knowledge, resources & skills to support and commit time to a resolution that calls for a plan and accountability for campus energy sustainability? (Q10)

Trend

Overall, fewer respondents felt they had the knowledge, resources & skills to support and commit time to such a resolution.

Determinants

Doers were statistically more likely to believe they had the skills knowledge and resources, whereas Non-Doers did not.

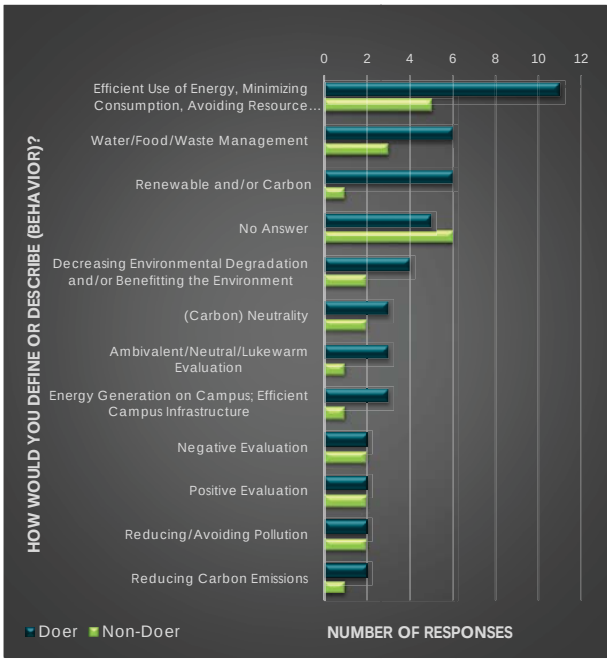
Recommendations

This is quite likely an important determinant. When people don't feel they know how to do something they typically disengage. Provide the knowledge, resources and skills need to support student leadership's engagement with energy sustainability on campus. Awareness raise around solutions. Talk to student leaders to ascertain what resources would help and provide these resources. Host events with skills-building designed into the event.

ANALYZE

Determinant: Perceived Self Efficacy

How would you define or describe campus energy sustainability? (Q38)



How would you define or describe (behavior)?	Doer	Non-Doer
Efficient Use of Energy, Minimizing Consumption, Avoiding Resource Depletion	11	5
Water/Food/Waste Management	6	3
Renewable and/or Carbon	6	1
No Answer	5	6
Decreasing Environmental Degradation and/or Benefitting the Environment	4	2
(Carbon) Neutrality	3	2
Ambivalent/Neutral/Lukewarm Evaluation	3	1
Energy Generation on Campus; Efficient Campus Infrastructure	3	1
Negative Evaluation	2	2
Positive Evaluation	2	2
Reducing/Avoiding Pollution	2	2
Reducing Carbon Emissions	2	1
Informational Campaign Focused on Behavior	2	0
Minimizing Negative Impacts Associated with Energy Use, Positive Change	2	0
Cooperation / Working Together	1	1
Don't Know	1	1
Cost Savings Measure	1	0
Important	1	0
Transparency	1	0

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ANALYZE

Determinant: Perceived Self Efficacy

How would you define or describe campus energy sustainability? (Q38)

Trend

Overall, respondents chose 1) efficient use of energy, minimizing consumption, avoiding resource depletion, 2) no answer, 3) water/food/waste management, 4) renewable and/or carbon, and 5) decreasing environmental degradation and/or benefitting the environment.

Determinants

There were no differences between Doers and Non-Doers.

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ANALYZE

Determinant: Perceived Self Efficacy

How would you define or describe campus energy sustainability? (Q38)

	Description of Bins for: "How would you define or describe (behavior)?"
Decreasing environmental degradation and/or benefitting the environment	Refers to preventing or decreasing environmental degradation or harm to the environment. Includes references such as 'keep the world healthy' and vague references to the environment.
Efficient use of energy, minimizing consumption, avoiding resource depletion	Includes mention of energy efficiency or efficient use of resources or the rate of energy use. Also includes mention of minimizing consumption, or avoiding resource depletion. Includes mentions such as 'careful usage of energy' or 'low-energy'.
Renewable and/or carbon-free energy generation and/or procurement	Includes mention of renewable, sustainable or carbon-free energy or energy (re)sources. Includes mention of nuclear energy. Includes mention of 'earth-friendly' energy sources.
Water/food/ waste management	Includes mention of eliminating, reducing or managing waste (including recycling). Includes references to water resource management and minimizing food waste.
Reducing/ avoiding pollution	Mentions decreasing, eliminating, or avoiding pollution.
Reducing carbon emissions	Includes mention of (carbon) emissions or carbon footprint reduction. Includes responses that mention carbon or emissions neutrality (e.g., 'net-zero carbon' or 'zero-emission') but does not include neutrality references that do not mention 'carbon' or 'emissions'.
(Carbon) neutrality	Refers to the concept of neutrality in some way. Includes mention of carbon neutrality, but also references such as 'zero-emission', 'net zero', and 'zero net energy'
Minimizing negative impacts associated with energy use, positive change	Includes general reference to benefits such as 'minimizing adverse consequences' or 'change for a better future' that are not specific enough to fall into the other categories.
Informational campaign focused on behavior	Includes references to informational campaigns or initiatives to make campuses more aware of energy use or behaviors.
Cooperation / working together	Includes references to 'working together' or 'coming together' in efforts to achieve energy sustainability.

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ANALYZE

Determinant: Perceived Self Efficacy

How would you define or describe campus energy sustainability? (Q38)

	Description of Bins for: "How would you define or describe (behavior)?"
Energy generation on campus; changes to campus infrastructure	Refers to generation or 'creation' of energy by campuses and/or changes to campus infrastructure.
Cost savings measure	Refers to a means for reducing financial costs.
Transparency	Mentions transparency as an important part of campus energy sustainability.
Positive evaluation	Refers to a positive evaluation or judgment made by the respondent about their energy sustainability of their own campus. Includes mention that campus is already sustainable or fairly/moderately sustainable. These responses were not the intended responses to the question.
Ambivalent / neutral / lukewarm evaluation	Refers to an ambivalent, neutral, or lukewarm evaluation or judgment made by the respondent about their energy sustainability of their own campus. Includes recognition of efforts to achieve energy sustainability, but lack of participation/awareness, slow progress, or significant distance to the goal. These responses were not the intended responses to the question.

	Description of Bins for: "How would you define or describe (behavior)?"
Negative evaluation	Refers to a negative evaluation or judgment made by the respondent about their energy sustainability of their own campus. Includes evaluations such as 'poor', 'nonexistent', 'lacking', and descriptions of actions not matching green reputation building. These responses were not the intended responses to the question.
Important	Refers to energy sustainability as 'important'. These responses were not the intended responses to the question.
Don't know	Respondent indicated that they did not know the answer to the question.

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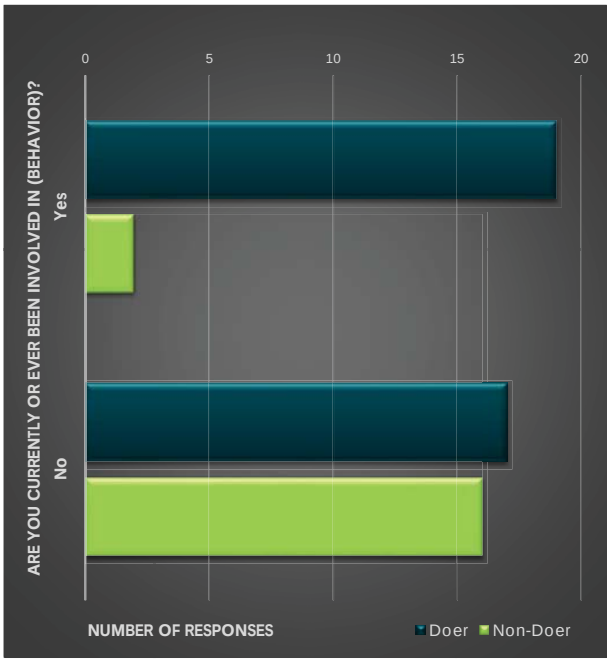
ANALYZE

Determinant: Perceived Self Efficacy

Are you currently, or have you ever been, involved in an environmental initiative on or off campus? (Q32)



Are you currently, or have you ever been involved in (behavior)?	Doer	Non-Doer
Yes	19	2
No	17	16

ANALYZE

Determinant: Perceived Self Efficacy

Are you currently, or have you ever been, involved in an environmental initiative on or off campus? (Q32)

Trend

A majority of respondents answered 'no' to this question.

Determinants

Doers are statistically more likely to say yes.

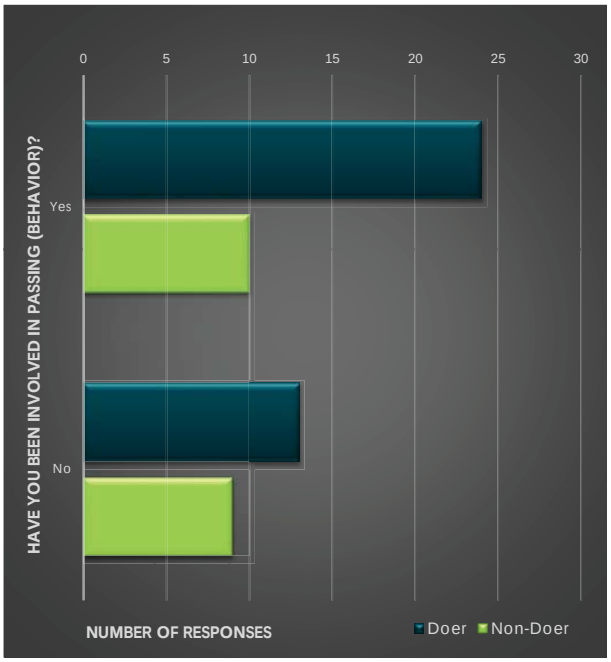
Recommendations

When people have already engaged in a certain issue area, they are more likely to re-engage. Create platforms for student involvement in environmental initiatives that are easy, fun, positive, social and effective.

ANALYZE

Determinant: Perceived Self Efficacy

Have you been involved in passing a resolution? (Q45)



Have you been involved in passing (behavior)?	Doer	Non-Doer
Yes	24	10
No	13	9

ANALYZE

Determinant: Perceived Self Efficacy

Have you been involved in passing a resolution? (Q45)

Trend

Most respondents said that they have been involved in passing a resolution.

Determinants

There was no difference between Doers and Non-Doers.

RECOMMENDATIONS

Determinant: Perceived Self Efficacy

It is essential to provide the knowledge, resources and skills need to support student leadership's engagement with energy sustainability on campus.

Any opportunities to make working on campus energy sustainability easier, such as creating an explicit vision, a roadmap to get there, a delegation of roles and responsibilities, collaborators and tools to collaborate, as identified by Doers and Non-Doers, should be taken. Focus on helping create systems for collaboration, creating a clear and explicit vision, and providing the necessary information for how to reach your shared goals. Student leaders expressed there is a "lack of information on how other campuses work towards these goals" and a desire to have workshops on campus sustainability.

Focus on solutions: Workshop and events should emphasize solutions and information on how to solve problems. Creating awareness and educational campaigns that emphasize solutions and skills building and sharing best practices from other campuses will fill this gap and provide exactly the kind of information they are seeking to become more effective change agents. Consider hosting events with skills-building designed into the event. Talk to student leaders to ascertain what resources would help and provide these resources.

Make it easy: Time is a precious commodity for students, and they are concerned about making big commitments to a sustainable energy program. As much as possible, opportunities should be given to students to make meaningful contributions to the program with little time commitment. Opportunities for them to be involved will be most successful if they become tied into their other responsibilities (homework, work study), have clear goals, are easy to contribute to, and take as small a time commitment as possible. For those students who choose to devote more time there should be a clear roadmap for them to increase their involvement, but for many students a relatively short commitment will be the most appealing.

When people have already engaged in a certain issue area, they are more likely to re-engage. Create platforms for student involvement in environmental initiatives that are easy, fun, positive, social and effective.

Emphasize benefits: Creating platforms to help students increase their confidence, leadership skills and contact network is an important step to improve perceived self-efficacy among both Doers and Non-Doers. The more appealing, credible opportunities there are for personal growth through campus participation the better.

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Determinant

Perceived Severity

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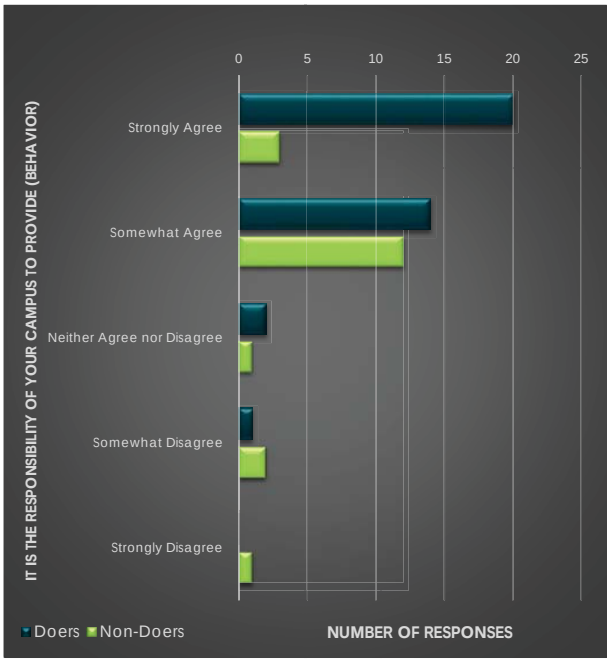
ANALYZE

Determinant: Perceived Severity

It is the responsibility of your campus to provide sustainable energy on campus so that students can choose to live a sustainable lifestyle. Q21(1)



It is the responsibility of your campus to provide (behavior)	Doers	Non-Doers
Strongly Agree	20	3
Somewhat Agree	14	12
Neither Agree nor Disagree	2	1
Somewhat Disagree	1	2
Strongly Disagree	0	1
	4.43**	3.74

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ANALYZE

Determinant: Perceived Severity

It is the responsibility of your campus to provide sustainable energy on campus so that students can choose to live a sustainable lifestyle. Q21(1)

Trend

Overall, a majority of respondents 1) somewhat agreed and 2) strongly agreed

Determinants

Doers chose "strongly agree" statistically more frequently than Non-Doers.

Preliminary Recommendations

Most Doers strongly agree that it is the responsibility of the campus to provide sustainable energy on campus so that students can choose to live a sustainable lifestyle, whereas most Non-Doers only somewhat agreed with this. Message around the responsibility the campus has to ensure students can live in accordance with environmental values.

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ANALYZE

Determinant: Perceived Severity

How serious would the following factors be if your campus does not make progress in energy sustainability? (Q23)

(1) My campus would contribute to climate change

Perceived Severity	Doer	Non-doer
Not at all serious	0	1
Not very serious	3	2
Slightly serious	7	9
Moderately serious	12	5
Very serious	14	2
Average Score	4.03**	3.26**

(2) My campus would not be taking a leadership role on issues important to society

Perceived Severity	Doer	Non-doer
Not at all serious	0	0
Not very serious	2	2
Slightly serious	3	7
Moderately serious	15	6
Very serious	16	4
Average Score	4.25**	3.63**

(3) My campus would spend more money

Perceived Severity	Doer	Non-doer
Not at all serious	1	0
Not very serious	4	4
Slightly serious	5	2
Moderately serious	14	6
Very serious	11	7
Average Score	3.86	3.84

(4) My campus would spend less money

Perceived Severity	Doer	Non-doer
Not at all serious	7	1
Not very serious	14	8
Slightly serious	7	7
Moderately serious	4	3
Very serious	2	0
Average Score	2.41	2.63

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ANALYZE

Determinant: Perceived Severity

How serious would the following factors be if your campus does not make progress in energy sustainability? (Q23)

(5) My campus would not be offering the possibility to its community to live a truly sustainable lifestyle

Perceived Severity	Doer	Non-doer
Not at all serious	1	1
Not very serious	4	6
Slightly serious	3	7
Moderately serious	20	4
Very serious	7	1
Average Score	3.80**	2.89**

(6) My campus would be going against its values

Perceived Severity	Doer	Non-doer
Not at all serious	5	2
Not very serious	4	4
Slightly serious	1	4
Moderately serious	10	4
Very serious	15	5
Average Score	3.74	3.32

(7) My campus would have less energy availability, and there would be an increased likelihood of blackouts

Perceived Severity	Doer	Non-doer
Not at all serious	8	4
Not very serious	5	1
Slightly serious	5	7
Moderately serious	7	5
Very serious	9	2
Average Score	3.12	3.00

(8) Other services would be diminished on my campus

Perceived Severity	Doer	Non-doer
Not at all serious	7	1
Not very serious	8	5
Slightly serious	6	3
Moderately serious	4	6
Very serious	8	4
Average Score	2.94	3.37

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ANALYZE

Determinant: Perceived Severity

How serious would the following factors be if your campus does not make progress in energy sustainability? (Q23)

(9) My campus would be contributing to adverse impacts on already marginalized communities

Perceived Severity	Doer	Non-doer
Not at all serious	2	2
Not very serious	4	1
Slightly serious	3	6
Moderately serious	9	5
Very serious	17	5
Average Score	4.00	3.53

(10) There would be no consequences

Perceived Severity	Doer	Non-doer
Not at all serious	18	8
Not very serious	6	7
Slightly serious	5	2
Moderately serious	2	2
Very serious	2	0
Average Score	1.91	1.89

(11) We are already sustainable

Perceived Severity	Doer	Non-doer
Not at all serious	6	3
Not very serious	7	6
Slightly serious	10	7
Moderately serious	4	3
Very serious	4	0
Average Score	2.77	2.53

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ANALYZE

Determinant: Perceived Severity

How serious would the following factors be if your campus does not make progress in energy sustainability? (Q23)

My campus would contribute to climate change**

- Overall, a majority of respondents chose moderately serious, with equal numbers choosing slightly serious and very serious as the next most popular choice.
- *Doers and more likely to choose very serious than Non-Doers.*
- Recommendation: Have Doers communicate to Non-Doers why they feel so strongly about the issue of climate change, creating a strong social norm that encourages Non-Doers to join with their peers. Collaborative opportunities, storytelling and public displays of social proof (signs, buttons) are all possible options here.

My campus would not be taking a leadership role on issues important to society**

- Overall, respondents chose moderately serious and very serious.
- Recommendation: Harness campus pride, interest in cultivation of leadership, and ability to influence for all students.

My campus would spend more money

- Overall, respondents chose moderately serious and very serious.

My campus would spend less money

- Overall, respondents chose not very serious, slightly serious and not at all serious.

My campus would not be offering the possibility to its community to live a truly sustainable lifestyle**

- Overall, respondents chose moderately serious, with equal numbers choosing slightly serious and not very serious as the next most popular choice.
- *Doers are more likely than Non-Doers to choose moderately serious.*
- Recommendation: Message around the importance of values driven institutions creating the foundation that allows its members to live in accordance with values.

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ANALYZE

Determinant: Perceived Severity

How serious would the following factors be if your campus does not make progress in energy sustainability? (Q23)

My campus would be going against its values**

- Overall, respondents chose very serious, moderately serious and not very serious.

My campus would have less energy availability, and there would be an increased likelihood of blackouts

- Overall, equal numbers of respondents chose not at all serious, slightly serious and moderately serious as the most popular choices.

Other services would be diminished on my campus

- Overall, respondents chose not very serious, very serious and moderately serious.

My campus would be contributing to adverse impacts on already marginalized communities**

- Overall, respondents chose very serious, moderately serious and slightly serious.

There would be no consequences

- Overall, respondents chose not all all serious, not very serious and slightly serious.

We are already sustainable

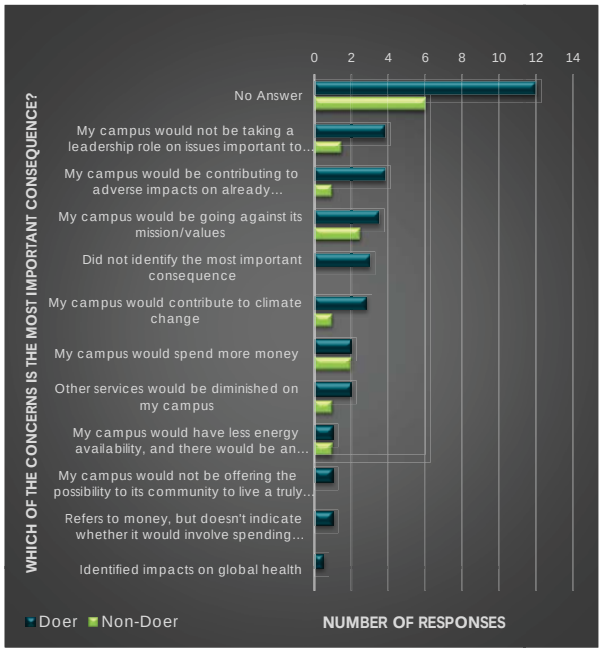
- Overall, respondents chose slightly serious, not very serious and not at all serious.

**Denotes questions where Non-Doers were statistically more likely to choose the “slightly serious” answer. This is a possible indication that the are unsure how to engage on these issues and picked the least firm answer.

ANALYZE

Determinant: Perceived Severity

Which of the above concerns is the most important consequence and why? Q33



Which of the concerns is the most important consequence?	Doer	Non-Doer
No Answer	12	6
My campus would not be taking a leadership role on issues important to society	3.83	1.5
My campus would be contributing to adverse impacts on already marginalized communities	3.83	1
My campus would be going against its mission/values	3.5	2.5
Did not identify the most important consequence	3	0
My campus would contribute to climate change	2.83	1
My campus would spend more money	2	2
Other services would be diminished on my campus	2	1
My campus would have less energy availability, and there would be an increased likelihood of blackouts	1	1
My campus would not be offering the possibility to its community to live a truly sustainable lifestyle	1	0
Refers to money, but doesn't indicate whether it would involve spending more or less money	1	0
Identified impacts on global health	0.5	0
Identified impacts on future generations	0.5	0
My campus would spend less money	0	1
There would be no consequences	0	1
Indicated that consequences listed are not those most important to their campus	0	1
We are already sustainable	0	0

ANALYZE

Determinant: Perceived Severity

Which of the above concerns is the most important consequence and why? Q33

Trend

Overall, a majority of respondents answered their campus "would be going against its mission/values," "would not be taking a leadership role on important issues in society," and "would be contributing to climate change."

Determinants

There was no difference between Doers and Non-Doers.

RECOMMENDATIONS

Determinant: Perceived Severity

Some of the responses, particularly those from Non-Doers, indicate that there is a lack of perceived severity when it comes to issues such as energy sustainability and climate change, the campus taking a leadership role on these issues and also offering the possibility for its community to live a truly sustainable life. People who grasp the severity of an issue are more likely to take steps to address it. Although public awareness around environmental issues has grown, it is still difficult for most people, UC students included, to grasp the *urgency* and *scale* of the changes taking place to the natural systems that support all life.

Message around the importance of values driven institutions creating the foundation that allows its members to live in accordance with values. Harness campus pride as progress is made.

Make it vivid and relatable: There are many ways to make environmental issues more tangible for students and empower them to push for solutions, without adapting crisis messaging which will tend to turn them off. These include: Getting students out into nature, connecting them with local environmental issues and advocates, introducing them to First Nations elders and their holistic perspectives, organizing campus greening opportunities, starting student-led green teams, and offering community volunteering opportunities such as beach cleanups.

Our favorite initiatives help make the severity of any an environmental challenge salient to the community (e.g., to show how much paper a campus wastes, collect all trashed and recycled paper for one day and put the reams in a centralized location).

These types of programs can boost perceived severity as students see how concerned and active other people are and as they start to become familiar with the environmental challenges facing campus communities.

Determinant

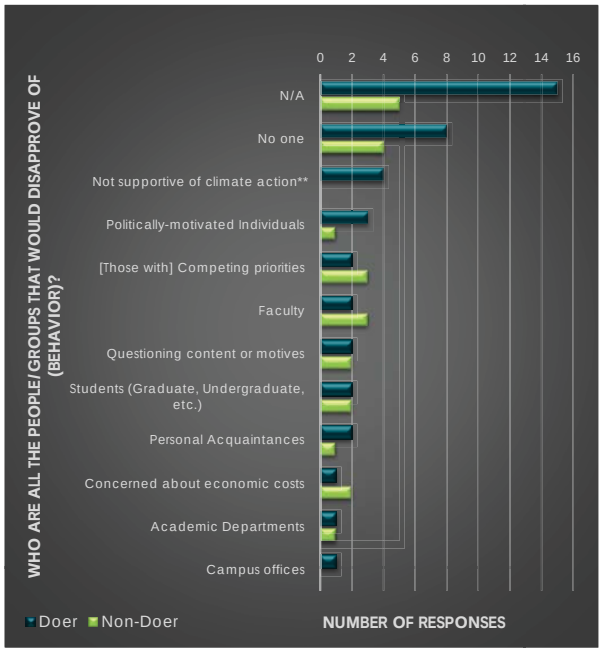
Perceived Social Acceptability

87

ANALYZE

Determinant: Perceived Social Acceptability

Who are all the specific people (or groups) that would disapprove of you or your decision to support and commit time to a resolution—coordinated across all ten campuses—to the administration that calls for a plan and accountability for campus energy sustainability? (Q12)



Who are all the people/groups that would disapprove of (behavior)?	Doer	Non-Doer
N/A	15	5
No one	8	4
Not supportive of climate action**	4	0
Politically-motivated Individuals	3	1
[Those with] Competing priorities	2	3
Faculty	2	3
Questioning content or motives	2	2
Students (Graduate, Undergraduate, etc.)	2	2
Personal Acquaintances	2	1
Concerned about economic costs	1	2
Academic Departments	1	1
Campus offices	1	0
Upper Administration	0	2
Student Government	0	1
Local, state and/or national governments	0	0
People impacted by environmental degradation	0	0
Political Organizations	0	0
Professional Acquaintances	0	0
Professionally Aligned Individuals	0	0
Public	0	0
Sustainability Oriented Individuals	0	0
Sustainability / Environment / Justice Oriented Groups / Orgs	0	0
Whole campus	0	0

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ANALYZE

Determinant: Perceived Social Acceptability

Who are all the specific people (or groups) that would disapprove of you or your decision to support and commit time to a resolution—coordinated across all ten campuses—to the administration that calls for a plan and accountability for campus energy sustainability? (Q12)

Trend

When asked about who would disapprove of a decision to support a resolution, the most reported response was that no one would disapprove. Some respondents mentioned that people with competing priorities and faculty might disapprove.

Determinants

Doers were significantly more likely to report anticipated disapproval from people who are not supportive of climate action.

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ANALYZE

Determinant: Perceived Social Acceptability

Who are all the specific people (or groups) that would disapprove of you or your decision to support and commit time to a resolution—coordinated across all ten campuses—to the administration that calls for a plan and accountability for campus energy sustainability? (Q12)

	Description of Bins for: "Who are all the people/groups that would disapprove of (behavior)?"
Upper administration	Upper administrators on campus. Includes the UCOP, Chancellor's Office, and others.
Academic departments	A division of a university or school faculty devoted to a particular academic discipline. Includes academic research units (e.g., research centers, institutes).
Faculty	Teaching staff of a university or college. Includes mention of faculty governance bodies such as the Academic Senate. Includes mention of academic advisors. If academic advisor is mentioned, select both this category and the "Professional Acquaintances" category.
N/A	Not specified. Includes "don't know", "not sure", and similar responses.
No one	No one would support such a decision.
Personal acquaintances	Family, friends, and any others who may have a close personal (as opposed to professional) connection to the respondent.
Professional acquaintances	Includes colleagues, mentors, advisors and other professional acquaintances. If academic advisor is mentioned, select both this category and the "Faculty" category.
Political organizations	Groups that have a connection to a political party or ideology. Includes political organizations both within and outside of the university community.
Politically-motivated Individuals	Individuals who are motivated to hold an opinion or participate in an activity based upon political perspectives or motivations.
Public	The wider population both beyond and including those who participate in campus functions, local community. Includes mentions of "all" or "everyone", etc.
Students (graduate, Undergraduate, etc.)	Individual who is enrolled in a program of study at one of the UCs. Includes general student organizations that are not sustainability- or environment-oriented.
Student government	Any UC student government body, including both undergraduate and graduate government groups.
Sustainability/ environment/ justice oriented groups/orgs	Groups that actively support environmental protection, sustainability, or environmental justice.
Sustainability oriented individuals	Individuals that actively support environmental protection, sustainability, or environmental justice.

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ANALYZE

Determinant: Perceived Social Acceptability

Who are all the specific people (or groups) that would disapprove of you or your decision to support and commit time to a resolution—coordinated across all ten campuses—to the administration that calls for a plan and accountability for campus energy sustainability? (Q12)

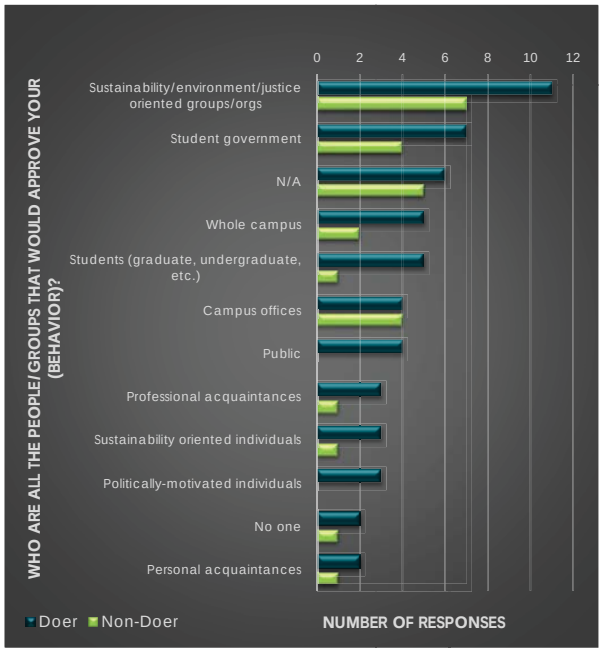
	Description of Bins for: "Who are all the people/groups that would disapprove of (behavior)?"
Professionally aligned individuals	Individuals whose work is related to sustainability/energy/environment issues. This includes faculty and others who do research in these areas, as well as staff members who are specifically tasked with responsibilities related to these issues.
People impacted by environmental degradation	People impacted by environmental problems such as pollution and global climate change.
Local, state and/or national governments	Local, state and/or national governments and governmental representatives. Includes non-elected governmental bureaus, offices and programs (e.g., resource management).
Campus offices	Campus offices and targeted programs (e.g., sustainability office, housing office).
Whole campus	The whole campus, or nearly everyone on campus.
Questioning content or motives	People who are concerned about the content or motives of the resolution.
Competing priorities	Individuals, groups or organizations with other priorities.
Concerned about economic costs	People or groups concerned about the economic costs.
Not supportive of climate action	People who lack awareness or knowledge of climate change or who distrust science.

91

ANALYZE

Determinant: Perceived Social Acceptability

Who are all the specific people (or groups) that would approve of you or your decision to support and commit time to a resolution that calls for a plan and accountability for campus energy sustainability? (Q11)



Who are all the people/groups that would approve your (behavior)?	Doer	Non-Doer
Sustainability/environment/justice oriented groups/orgs	11	7
Student government	7	4
N/A	6	5
Whole campus	5	2
Students (graduate, undergraduate, etc.)	5	1
Campus offices	4	4
Public	4	0
Professional acquaintances	3	1
Sustainability oriented individuals	3	1
Politically-motivated individuals	3	0
No one	2	1
Personal acquaintances	2	1
Academic departments	2	0
Faculty	2	0
People impacted by environmental degradation	2	0
Professionally aligned individuals	2	0
Upper administration	1	1
Local, state and/or national governments	1	0
Political organizations	1	0
Competing priorities	0	0
Concerned about economic costs	0	0
Not supportive of climate action	0	0
Questioning content or motives	0	0

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ANALYZE

Determinant: Perceived Social Acceptability

Who are all the specific people (or groups) that would approve of you or your decision to support and commit time to a resolution that calls for a plan and accountability for campus energy sustainability? (Q11)

Trend

When asked about who would approve of a decision to support a resolution, respondents reported that sustainability/environment/justice oriented groups and student governments would approve of a decision to support a resolution.

Determinants

There were no significant differences between Doers and Non-Doers.

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ANALYZE

Determinant: Perceived Social Acceptability

Who are all the specific people (or groups) that would approve of you or your decision to support and commit time to a resolution that calls for a plan and accountability for campus energy sustainability? (Q11)

	Description of Bins for: "Who are all the people/groups that would approve of (behavior)?"
Upper administration	Upper administrators on campus. Includes the UCOP, Chancellor's Office, and others.
Academic departments	A division of a university or school faculty devoted to a particular academic discipline. Includes academic research units (e.g., research centers, institutes).
Faculty	Teaching staff of a university or college. Includes mention of faculty governance bodies such as the Academic Senate. Includes mention of academic advisors. If academic advisor is mentioned, select both this category and the "professional acquaintances" category.
N/A	Not specified - includes "don't know", "not sure", and similar responses.
No one	No one would support such a decision.
Personal acquaintances	Family, friends, and any others who may have a close personal (as opposed to professional) connection to the respondent.
Professional acquaintances	Includes colleagues, mentors, advisors and other professional acquaintances. If academic advisor is mentioned, select both this category and the "Faculty" category.
Political organizations	Groups that have a connection to a political party or ideology. Includes political organizations both within and outside of the university community.

	Description of Bins for: "Who are all the people/groups that would approve of (behavior)?"
Politically-motivated individuals	Individuals who are motivated to hold an opinion or participate in an activity based upon political perspectives or motivations.
Public	The wider population both beyond and including those who participate in campus functions, local community. Includes mentions of "all" or "everyone", etc.
Students (graduate, undergraduate, etc.)	Individual who is enrolled in a program of study at one of the UCs. Includes general student organizations that are not sustainability- or environment-oriented.
Student government	Any UC student government body, including both undergraduate and graduate government groups.
Sustainability/ environment/ justice oriented groups/orgs	Groups that actively support environmental protection, sustainability, or environmental justice.
Sustainability Oriented Individuals	Individuals that actively support environmental protection, sustainability, or environmental justice.

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ANALYZE

Determinant: Perceived Social Acceptability

Who are all the specific people (or groups) that would approve of you or your decision to support and commit time to a resolution that calls for a plan and accountability for campus energy sustainability? (Q11)

	Description of Bins for: "Who are all the people/groups that would approve of (behavior)?"
Professionally aligned individuals	Individuals whose work is related to sustainability/energy/environment issues. This includes faculty and others who do research in these areas, as well as staff members who are specifically tasked with responsibilities related to these issues.
People impacted by environmental degradation	People impacted by environmental problems such as pollution and global climate change.
Local, state and/or national governments	Local, state and/or national governments and governmental representatives. Includes non-elected governmental bureaus, offices and programs (e.g., resource management).
Campus offices	Campus offices and targeted programs (e.g., sustainability office, housing office).
Whole campus	The whole campus, or nearly everyone on campus.
Questioning content or motives	People who are concerned about the content or motives of the resolution.

	Description of Bins for: "Who are all the people/groups that would approve of (behavior)?"
Competing priorities	Individuals, groups or organizations with other priorities.
Concerned about economic costs	People or groups concerned about the economic costs.
Not supportive of climate action	People who lack awareness or knowledge of climate change or who distrust science.

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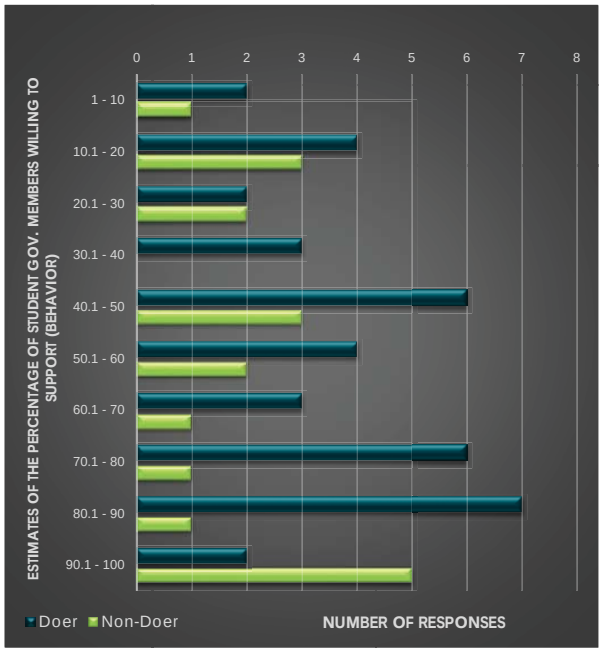
ANALYZE

Determinant: Perceived Social Acceptability

What percentage of student government members on your campus do you think support and are willing to commit time to a resolution—coordinated across all ten campuses—to the administration that calls for a plan and accountability for campus energy sustainability? (Q15)



Estimates of the percentage of student government members willing to support [behavior]	Doer	Non-Doer
Average Percentage	55	57.23
Median Percentage	60	51

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ANALYZE

Determinant: Perceived Social Acceptability

What percentage of student government members on your campus do you think support and are willing to commit time to a resolution—coordinated across all ten campuses—to the administration that calls for a plan and accountability for campus energy sustainability? (Q15)

Trend

Overall, Doers and Non-Doers both believed slightly more than half of student government members support and are willing to commit time to a resolution.

Determinants

There were no significant differences between Doers and Non-Doers.

RECOMMENDATIONS

Determinant: Perceived Social Acceptability

Both Doers and Non-Doers felt overall that there would be very little disapproval if they supported an energy sustainability resolutions; only a few indicated potential disapproval from those with competing priorities or faculty. When asked about who would approve of a decision to support a resolution, respondents reported that sustainability/environment/justice oriented groups and student governments would approve of a decision to support a resolution, as well as some campus organizations/offices (e.g., housing, the undergraduate union). On average, both Doers and Non-Doers thought that roughly 55% of their peers in student government would support such a resolution; 66% of the respondents to this survey reported they would support it.

It would be good to know whether student leaders think those whose opinions matter to them would approve or disapprove. Regardless, it appears that there is no mistaken norm to correct, and no sense of widespread disapproval. Repeatedly message that support on campus has hit the tipping point regarding support for energy sustainability to start establishing a strong norm.

Provide positive social proof: As busy individuals making thousands of choices each day, we save time by modeling our choices off of the values, expectations, and practices of our community, neighbors, and friends. What is normal, or ordinary, is a powerful driver of human behavior. Rather than noting how often our target group performs the wrong behavior, focus on showing that most people perform the right behavior. Demonstrating in specific terms what the audience's particular reference group is doing will also correct false assumptions about how often others perform the target behavior.

For example, expose Doers and Non-Doers alike to stories of other students just like themselves taking action. Find opportunities to illustrate that many other students are also engaged in sustainable energy programs. Develop opportunities for students to network and collaborate with peers from other campuses. Help them share their stories locally through social media and campus-facing campaigns. The more they see their fellow students as supportive and similarly engaged, the more empowered they will feel and they more they will see working toward energy sustainability as normal and expected behavior.

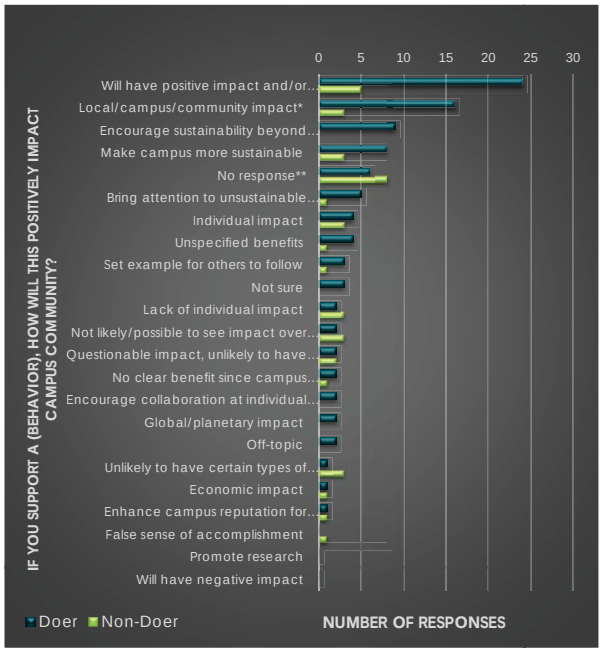
Determinant

Perceived Susceptibility

ANALYZE

Determinant: Perceived Susceptibility

If you support and commit time to a resolution to the administration that calls for a plan and accountability for campus energy sustainability how will this positively impact the campus community and your ability to choose to fully live a sustainable life? (Q18)



If you support a (behavior), how will this positively impact the campus community?	Doer	Non-Doer
Will have positive impact and/or reduce negative impact**	24	5
Local/campus/community impact*	16	3
Encourage sustainability beyond campus*	9	0
Make campus more sustainable	8	3
No response**	6	8
Bring attention to unsustainable practices and/or promote accountability	5	1
Individual impact	4	3
Unspecified benefits	4	1
Set example for others to follow	3	1
Not sure	3	0
Lack of individual impact	2	3
Not likely/possible to see impact over short time frame and/or over long term	2	3
Questionable impact, unlikely to have significant positive impact	2	2
No clear benefit since campus and/or self are already sustainable	2	1
Encourage collaboration at individual or campus level	2	0
Global/planetary impact	2	0
Off-topic	2	0
Unlikely to have certain types of positive impacts, but likely to have others, or mix of positive and negative impacts **	1	3
Economic impact	1	1
Enhance campus reputation for sustainability	1	1
False sense of accomplishment	0	1
Promote research	0	0
Will have negative impact	0	0

ANALYZE

Determinant: Perceived Susceptibility

If you support and commit time to a resolution to the administration that calls for a plan and accountability for campus energy sustainability how will this positively impact the campus community and your ability to choose to fully live a sustainable life? (Q18)

Trend

When asked about the positive impacts of a potential resolution on the campus community or the respondents' ability to choose sustainable lifestyles, approximately half of the respondents indicated a positive impact, although some respondents did not provide any details what these impacts would be. Respondents often mentioned positive local, campus, or community impacts, including making campus more sustainable and encouraging sustainability beyond campus.

Determinants

Doers were significantly more likely to report positive impacts overall, and to see possibilities for local, campus or community impacts and for encouraging sustainability beyond campus.

Non-Doers were more likely to provide no response to the question, or to anticipate a combination of positive and negative impacts.

Recommendations

Ask Doers to share their hopeful, positive outlooks with Non-Doers, especially in regards to local, campus and community impacts.

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ANALYZE

Determinant: Perceived Susceptibility

If you support and commit time to a resolution to the administration that calls for a plan and accountability for campus energy sustainability how will this positively impact the campus community and your ability to choose to fully live a sustainable life? (Q18)

		Description of Bins for: "If you support a (behavior), how will this positively impact the campus community?"
	Not sure	Participant indicates that they are not sure about response.
	No response	Participant does not provide a response.
	Off-topic	Participant provides an off-topic response
Size/likelihood of impact	Questionable impact, unlikely to have significant positive impact	Describes impact as unlikely or minor. Do not select this option if response indicates that some impacts are likely while others are unlikely.
	No clear benefit since campus and/or self are already sustainable	Describes benefit as unlikely due to the notion that the campus or the self is already sustainable.
	Will have positive impact and/or reduce negative impact	Describes anticipated impact that is positive. Do not select this option if response indicates that some positive impacts are likely while others are unlikely.
	Will have negative impact	Describes anticipated impact that is negative. Do not select this option if response also indicates that some positive impacts are likely.
	Unlikely to have certain types of positive impacts, but likely to have others, or mix of positive and negative impacts	Indicates that some positive impacts are likely while others are unlikely, or if both positive and negative impacts are anticipated.
Scale of impact	Lack of individual impact	Mentions lack of impact at the individual level.
	Individual impact	Mentions impact that is at the individual level.
	Local/campus/community impact	Mentions impact that is at the local, campus, or community level.
	Global/planetary impact	Mentions impact that is at the global or planetary level.

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ANALYZE

Determinant: Perceived Susceptibility

If you support and commit time to a resolution to the administration that calls for a plan and accountability for campus energy sustainability how will this positively impact the campus community and your ability to choose to fully live a sustainable life? (Q18)

		Description of Bins for: "If you support a (behavior), how will this positively impact the campus community?"
Time frame of impact	Not likely/possible to see impact over short time frame and/or possible to see impact over long term	Identifies impacts as only realized in the long term, or points out the lack of short-term impacts.
	False sense of accomplishment	Describes a situation where one or more people do something that feels like an accomplishment, but that has little or no impact.
	Unspecified benefits	Indicates that there is some type of benefit or positive impact, but does not provide any information about what type of benefit.
	Make campus more sustainable	Mentions campus becoming sustainable or more sustainable. Includes imagined future scenarios in which campus is sustainable and situations in which campus members are taking action or have opportunities to take action to be more sustainable. Includes generic mentions of becoming more sustainable (when who/how is not identified).
	Encourage sustainability beyond campus	Mentions situations or outcomes that encourage or support sustainability beyond campus (e.g., in personal life, other activities completed off-campus)
	Bring attention to unsustainable practices and/or promote accountability	Describes bringing attention to unsustainable practices and/or promoting accountability. Includes discussion of learning, educating or raising awareness.
	Encourage collaboration at individual or campus level	Mentions encouraging collaboration at either the individual or the campus level.
	Set example for others to follow	Mentions setting an example for others to follow, helping others to accomplish the same thing, or passing on things learned.
	Enhance campus reputation for sustainability	Mentions enhancement of campus reputation for sustainability
	Economic impact	Mentions one or more economic impacts, such as cost savings.
	Promote research	Mentions research and/or development as a benefit

ANALYZE

Determinant: Perceived Susceptibility

Please rank the following in order of who you think is most to least responsible for supporting and committing time to a resolution (or other similar initiatives) to the administration that calls for a plan and accountability for campus energy sustainability. (Q19)

Ranked as the most responsible

Please rank in order of who you think is most to least responsible for supporting (behavior)	Doers	Non-Doers	TOTAL
The Office of the President	**14**	**7**	**21**
Energy management staff	**6**	**4**	**10**
Student leaders	**8**	**1**	**9**
The Chancellor's Offices	**6**	**2**	**8**
Deans	1	1	2
Other students on my campus	1	1	2
Faculty	1	0	1
Other individuals unaffiliated with the UC System	0	1	1
Department chairs	0	0	0

Ranked in the top 3 as most responsible

Please rank in order of who you think is most to least responsible for supporting (behavior)	Doers	Non-Doers	TOTAL
The Chancellor's Offices	**25**	**11**	**36**
The Office of the President	**21**	**11**	**32**
Energy management staff	**20**	**7**	**27**
Deans	**16**	**7**	**23**
Student leaders	12	7	19
Other students on my campus	9	4	13
Faculty	5	1	6
Department chairs	2	2	4
Other individuals unaffiliated with the UC System	1	1	2

ANALYZE

Determinant: Perceived Susceptibility

Please rank the following in order of who you think is most to least responsible for supporting and committing time to a resolution (or other similar initiatives) to the administration that calls for a plan and accountability for campus energy sustainability? (Q19)

Trend

Overall, respondents ranked these groups as their highest ranked choice: Office of the President, the Energy Management staff, student leaders and the Chancellor's Office were most responsible for supporting and committing time to a resolution.

Respondents ranked four groups in the top three the most frequently: the Chancellor's Office, Office of the President, the Energy Management staff, and Deans.

In summary, the student leaders who responded overwhelmingly feel that responsibility lies primarily with UCOP, campus upper administration, deans, and staff whose jobs are related. Doers are seeing this as a student leader responsibility as well; almost no one sees this as primarily the responsibility of faculty, department chairs or other students.

Determinants

There is no difference statistical difference between Doers and Non-Doers.

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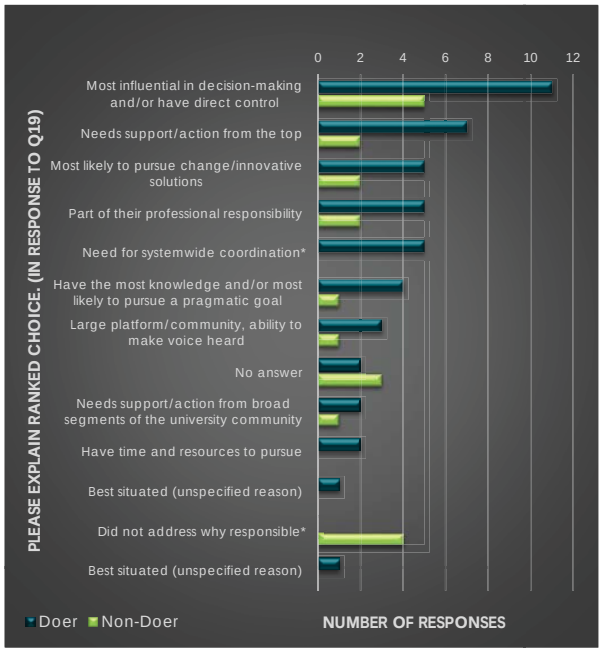
ANALYZE

Determinant: Perceived Susceptibility

Please explain your first ranked choice. Q20. In response to: Please rank the following in order of who you think is most to least responsible for supporting and committing time to a resolution (or other similar initiatives) to the administration that calls for a plan and accountability for campus energy sustainability?



Please explain your first ranked choice. (In response to Q19)	Doer	Non-Doer
Most influential in decision-making and/or have direct control	11	5
Needs support/action from the top	7	2
Most likely to pursue change/innovative solutions	5	2
Part of their professional responsibility	5	2
Need for systemwide coordination*	5	0
Have the most knowledge and/or most likely to pursue a pragmatic goal	4	1
Large platform/community, ability to make voice heard	3	1
No answer	2	3
Needs support/action from broad segments of the university community	2	1
Have time and resources to pursue	2	0
Best situated (unspecified reason)	1	0
Did not address why responsible*	0	4

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ANALYZE

Determinant: Perceived Susceptibility

Please explain your first ranked choice. Q20. In response to: Please rank the following in order of who you think is most to least responsible for supporting and committing time to a resolution (or other similar initiatives) to the administration that calls for a plan and accountability for campus energy sustainability?

Trend

Overall, respondents listed their reasons for first choice as 1) most influential in decision-making and/or have direct control 2) needs support/action from the top 3) part of their professional responsibility and 4) have the most knowledge and/or most likely to pursue a pragmatic goal.

Determinants

Some Doers listed the need for system-wide cooperation to explain their rankings whereas none of the Non-Doers did. Some Non-Doers chose not to address why they felt their first choice was most responsible, whereas all Doers did address it.

Recommendation

Engaging Doers to message to Non-Doers that they consider it their shared responsibility. Plan a small and easy win to show Non-Doers that ground up involvement can make a difference; this can provide proof of concept.

ANALYZE

Determinant: Perceived Susceptibility

Please explain your first ranked choice. Q20. In response to: Please rank the following in order of who you think is most to least responsible for supporting and committing time to a resolution (or other similar initiatives) to the administration that calls for a plan and accountability for campus energy sustainability?

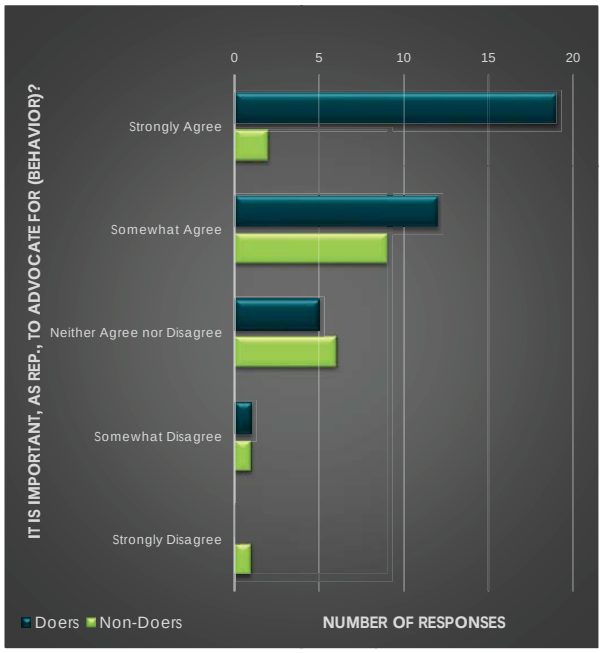
	Description of Bins for: "Please explain your first ranked choice. (In response to Q19)"
Best situated (unspecified reason)	Refers to instances in which responsibility was identified, but for which no justification was provided except that the individual(s)/group(s) identified are in the best position to take action.
Did not address why responsible	A response was given, but this response did not address why the highest-ranked individual/group bears the greatest responsibility.
Have the most knowledge and/or most likely to pursue a pragmatic goal	Refers to possession of knowledge or 'know-how' and/or mentions that this knowledge serves in pursuit of a pragmatic or realistic goal.
Have time and resources to pursue	Mentions possession of time and/or resources necessary to pursue action.
Large platform/ community, ability to make voice heard	Mentions possession of a large platform or community that they can influence and/or having the ability to make their voice heard.
Most influential in decision-making and/or have direct control	Refers to mention of influence or power in decision-making and/or direct control of decisions.

	Description of Bins for: "Please explain your first ranked choice. (In response to Q19)"
Most likely to pursue change/innovative solutions	Refers to mention of likelihood of making a commitment, advocating for change and/or pursuing solutions. Includes mention of passion and/or freedom from conflict of interest regarding the issue.
Need for systemwide coordination	Mentions activities that involve several campuses or are coordinated across campuses. Includes mention of collaboration, cohesion, or joint activities or goals.
Needs support/action from the bottom	Mentions the need for bottom-up ideas and/or solutions.
Needs support/action from the top	Mentions the need for and/or success of action that begins at the top of the university hierarchy. Includes mention of collaboration or coordination between other individuals/groups on campus and those at the top of the decision-making hierarchy.
Part of their professional responsibility	Refers to mention of career or professional duties or responsibilities associated with job or role on campus.
no answer	No response was given.

ANALYZE

Determinant: Perceived Susceptibility

It is important for you, as a representative of UC students, to advocate for your campus to become energy sustainable? Q21(2)



It is important for you, as a Rep of UC Students, to advocate for (behavior)?	Doers	Non-Doers
Strongly Agree	19	2
Somewhat Agree	12	9
Neither Agree nor Disagree	5	6
Somewhat Disagree	1	1
Strongly Disagree	0	1
Average Score	4.32	3.53

ANALYZE

Determinant: Perceived Susceptibility

It is important for you, as a representative of UC students, to advocate for your campus to become energy sustainable? Q21(2)

Trend

Overall, a majority of respondents 1) somewhat agreed and 2) strongly agreed

Determinants

Doers tended to strongly agree much more than Non-Doers.

Recommendation

Doers should share their perspective that it is important for them to advocate. Sharing success stories or inviting Non-Doers to take part in an initiative which achieves some small success might be a good approach.

RECOMMENDATIONS

Determinant: Perceived Susceptibility

Overall, most Non-Doers didn't report that moving toward energy sustainability would positively impact them or their campus, or that it their responsibility. They primarily believed it was the responsibility of top administration, the Office of the President and those whose job it is to work on these issues.

Engage Doers to message to Non-Doers that they consider it their shared responsibility. Plan a small and easy win to show Non-Doers that ground up involvement can make a difference; this can provide proof of concept. Ask Doers to share their hopeful, positive outlooks with Non-Doers, especially in regards to local, campus and community impacts.

Make the problem salient: When environmental problems are communicated vividly in terms we can easily conceptualize, we are more likely to respond to them. Use engaging photographs and descriptive language to bring the problem to life for our audiences in terms that are salient to them.

Focus on immediate impacts of our actions: When discussing the environment, emphasize the most immediate and concrete impacts, rather than consequences that will occur in the distant future, or the likelihood of the event occurring. This will help to counteract our human tendencies to undervalue faraway events and misinterpret probabilities and make the issue more salient in the minds of our audiences.

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Values

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ANALYZE

Values

People have different values and priorities when it comes to making decisions. Thinking about your own personal values, how would you rate the following: (Q34)

(1) Equality (equal opportunity for all)

Values	Doer	Non-doer
Extremely Important	23	10
Very Important	7	6
Moderately Important	4	2
Slightly Important	0	0
Not at All Important	0	0
No Response	3	1

(2) Social power (control over others, dominance)

Values	Doer	Non-doer
Extremely Important	5	5
Very Important	4	1
Moderately Important	10	6
Slightly Important	8	4
Not at All Important	7	2
No Response	3	1

(3) Wealth (material possessions, money)

Values	Doer	Non-doer
Extremely Important	4	4
Very Important	3	1
Moderately Important	11	7
Slightly Important	13	5
Not at All Important	3	1
No Response	3	1

(4) Self-respect (belief in one's own worth)

Values	Doer	Non-doer
Extremely Important	21	12
Very Important	8	5
Moderately Important	5	1
Slightly Important	0	0
Not at All Important	0	0
No Response	3	1

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ANALYZE

Values

People have different values and priorities when it comes to making decisions. Thinking about your own personal values, how would you rate the following: (Q34)

(5) A world of Peace (Free of War and Conflict)

Perceived Severity	Doer	Non-doer
Extremely Important	15	8
Very Important	10	5
Moderately Important	6	3
Slightly Important	3	2
Not at All Important	0	0
No Response	3	1

(6) Respect for Tradition (Preservation of Time-Honored Customs)

Perceived Severity	Doer	Non-doer
Extremely Important	4	2
Very Important	7	3
Moderately Important	11	7
Slightly Important	7	4
Not at All Important	5	2
No Response	3	1

(7) Social Recognition (Respect, Approval by Others)

Perceived Severity	Doer	Non-doer
Extremely Important	2	2
Very Important	11	6
Moderately Important	14	5
Slightly Important	5	5
Not at All Important	2	0
No Response	3	1

(8) Unity with Nature (Fitting into Nature)

Perceived Severity	Doer	Non-doer
Extremely Important	8	1
Very Important	11	2
Moderately Important	10	8
Slightly Important	4	4
Not at All Important	1	3
No Response	3	1

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ANALYZE

Values

People have different values and priorities when it comes to making decisions. Thinking about your own personal values, how would you rate the following: (Q34)

(9) Wisdom (A Mature Understanding of Life)

Perceived Severity	Doer	Non-doer
Extremely Important	14	5
Very Important	13	4
Moderately Important	5	5
Slightly Important	1	4
Not at All Important	1	0
No Response	3	1

(10) Authority (The Right to Lead or Command)

Perceived Severity	Doer	Non-doer
Extremely Important	3	3
Very Important	8	3
Moderately Important	15	7
Slightly Important	5	3
Not at All Important	3	2
No Response	3	1

(11) A world of Beauty (Beauty of Nature and the Arts)

Perceived Severity	Doer	Non-doer
Extremely Important	9	4
Very Important	9	3
Moderately Important	9	7
Slightly Important	7	4
Not at All Important	0	0
No Response	3	1

(12) Social Justice (Correcting Injustice, Care for the weak)

Perceived Severity	Doer	Non-doer
Extremely Important	21	7
Very Important	9	7
Moderately Important	3	2
Slightly Important	1	1
Not at All Important	0	1
No Response	3	1

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ANALYZE

Values

People have different values and priorities when it comes to making decisions. Thinking about your own personal values, how would you rate the following: (Q34)

(13) Broadminded (Tolerant of Different Ideas and Beliefs)

Perceived Severity	Doer	Non-doer
Extremely Important	24	12
Very Important	6	5
Moderately Important	4	1
Slightly Important	0	0
Not at All Important	0	0
No Response	3	1

(14) Preserving my Public Image (Protecting my Face)

Perceived Severity	Doer	Non-doer
Extremely Important	0	2
Very Important	5	6
Moderately Important	11	4
Slightly Important	12	5
Not at All Important	6	1
No Response	3	1

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ANALYZE

Other: Risk Tolerance

Many decisions involve an element of uncertainty. Thinking about your own preferences, please rate how well each statement describes your style of decision making: (Q35)

(1) I don't like situations that are uncertain

Risk Tolerance	Doer	Non-Doer
Extremely Well	4	2
Very Well	9	8
Moderately Well	9	6
Slightly Well	9	1
Not at all Well	3	1
No Response	3	1

(3) I find that a well-ordered life with regular hours suits my temperament

Risk Tolerance	Doer	Non-Doer
Extremely Well	2	4
Very Well	6	2
Moderately Well	14	7
Slightly Well	8	5
Not at all Well	4	0
No Response	3	1

(2) I dislike questions which could be answered in many different ways

Risk Tolerance	Doer	Non-Doer
Extremely Well	2	2
Very Well	2	1
Moderately Well	4	5
Slightly Well	9	3
Not at all Well	17	7
No Response	3	1

(4)When I have made a decision I feel relieved

Risk Tolerance	Doer	Non-Doer
Extremely Well	6	3
Very Well	13	3
Moderately Well	10	8
Slightly Well	4	4
Not at all Well	1	0
No Response	3	1

ANALYZE

Other: Risk Tolerance

Many decisions involve an element of uncertainty. Thinking about your own preferences, please rate how well each statement describes your style of decision making: (Q35)

(5) I enjoy having a clear and structured mode of life.

Risk Tolerance	Doer	Non-Doer
Extremely Well	7	5
Very Well	10	6
Moderately Well	9	5
Slightly Well	8	2
Not at all Well	0	0
No Response	3	1

(6) I do not usually consult many different opinions before forming my own view.

Risk Tolerance	Doer	Non-Doer
Extremely Well	2	0
Very Well	0	3
Moderately Well	4	3
Slightly Well	7	4
Not at all Well	21	8
No Response	3	1

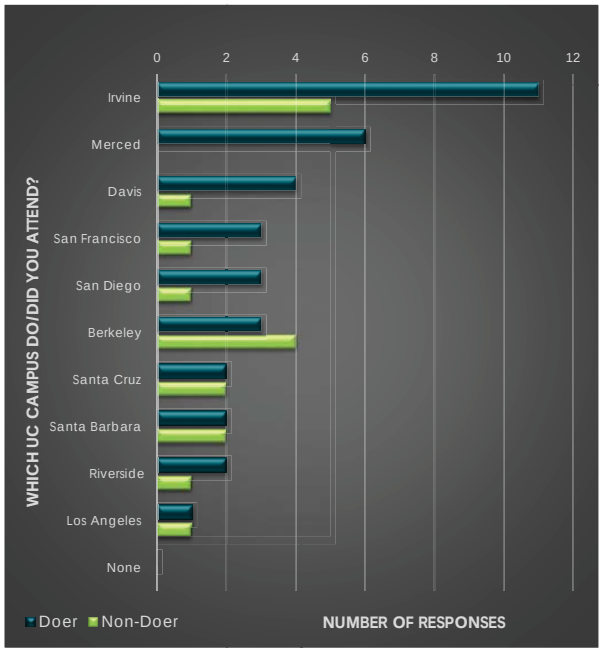
(7) I dislike unpredictable situations.

Risk Tolerance	Doer	Non-Doer
Extremely Well	5	3
Very Well	5	7
Moderately Well	8	4
Slightly Well	9	2
Not at all Well	7	2
No Response	3	1

Demographics

DEMOGRAPHICS

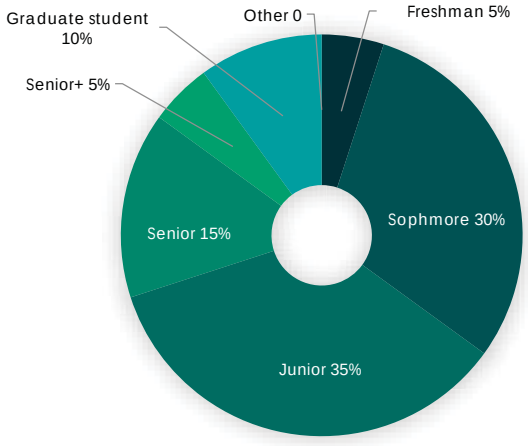
Which UC campus do/did you attend? Q26



Which UC campus do/did you attend?	Doer	Non-Doer
Irvine	11	5
Merced	6	0
Davis	4	1
San Francisco	3	1
San Diego	3	1
Berkeley	3	4
Santa Cruz	2	2
Santa Barbara	2	2
Riverside	2	1
Los Angeles	1	1
None	0	0

DEMOGRAPHICS

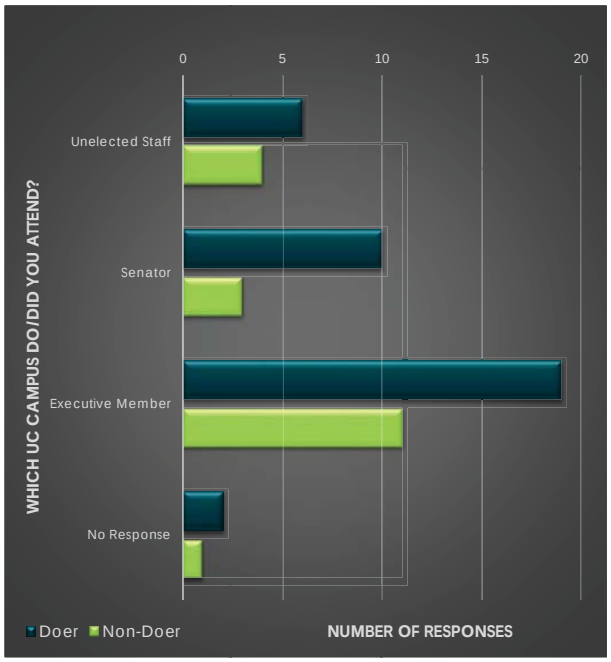
What year are you? (Q27)



Year in School	Doer	Non-Doer
Graduate Student	19	10
Junior	8	5
Senior	7	2
Sophomore	3	1

DEMOGRAPHICS

What office do you hold?



Position Held	Doer	Non-Doer
Unelected Staff	6	4
Senator	10	3
Executive Member	19	11
No Response	2	1

6.1.8. Recommendations for the CNI Student Engagement Fellowship Program

The UC President's Carbon Neutrality Initiative Student Fellowship Program funds student-generated projects that support the UC system's goal to produce zero-net greenhouse gas emissions by 2025. The program began in spring 2015. All 10 UC campuses plus the UC Office of the President, UC Agriculture and Natural Resources, and Lawrence Berkeley National Laboratory participate in the program which is open to undergraduate and graduate students and is administered at each location to ensure that student efforts align with local needs.

The Synthesis and Student Engagement Subgroup of the TomKat Strategic Communication Working Group developed the following recommendations for strengthening the role of the CNI Student Fellows in supporting the goals of the UC Carbon Neutrality Initiative. These recommendations were provided to administrators and staff managing the CNI fellows program in Summer 2017 so that they could be of use during planning for the incoming CNI fellows.

Summary of Contents

Overview and Rationale

Employing successful student engagement efforts for the UC Carbon Neutrality Initiative is critical to achieving the 2025 carbon neutrality goal. Student engagement in the initiative is necessary in making it a priority for key stakeholders on each UC campus. Students are the largest stakeholder group, with the

potential to have the strongest voice for institutional change and the largest impact through personal behavioral change. This has been shown through previous UC-wide campaigns, such as the Fossil Free UC campaign of students, faculty, staff, alumni, and community members requesting the University of California to divest from the fossil fuel industry. Following sustained student pressure for divestment, UC has committed to date to divest approximately $350 million (~13%) of its approximately $2.8 billion in holdings in coal, oil and gas companies.

Recognizing the importance of engaging UC students on issues such as carbon neutrality, the UC Office of the President has already invested significant resources in the CNI Fellows program. The program supports multiple students at each UC campus as they complete projects focused on carbon neutrality. Some of the fellows are CNI Student Engagement Fellows, who are selected specifically to complete projects that raise student awareness of and engagement with carbon neutrality. While the CNI Student Engagement (SE) Fellows have seen successes in many of their efforts, those of us who have contributed the suggestions that make up this document see ways in which the program could be refined to develop and support CNI-SE fellows' capacity to effectively engage students on their campuses with carbon neutrality.

We see great potential in strengthening the CNI Student Engagement Fellows program to help it become even more effective in bringing a broader set of students into the conversation about carbon neutrality. As the generation that will be at the heart of innovation in combatting the global climate crisis, students should be engaged in developing sustainable energy solutions for the UC system so that they can develop the knowledge and skillsets needed to be the leaders of tomorrow. To proactively build societal capacity to tackle these challenges, a wider reach of students need to become informed about and engaged in the deliberation and decision making at UC. UC CNI SE fellows can play a key role in spanning the communication gap between students and administrators, faculty, staff and other campus stakeholders. Because relations between students and these groups are sometimes strained due to differences in values and the daily challenges they face, CNI SE fellows can be employed in a formal capacity to serve as 'boundary agents'. A boundary agent connects two otherwise siloed groups within an organization. In this case, CNI SE fellows address the boundaries between administration and students, UCOP and each campus, and initiatives and student lives. These are the overarching goals of the CNI SE fellow positions. Strengthening the role of the CNI SE fellows can allow us reach a broader set of students, bring them into the conversation about carbon neutrality, and help them to develop informed opinions about the issue. The expanded student engagement achieved through these efforts will enable direct carbon reductions through student-led projects and behavior change.

Recommendations

Current CNI SE fellows, and students who are engaged in the initiative in other ways, delivered the recommendations provided here. Initial recommendations were developed at the April 2017 meeting of the UC-TomKat Carbon Neutrality Strategic Communication Working Group meeting focused on student engagement. We intend these recommendations to be a first step, and further research should be pursued to continue to improve and strengthen these positions.

1. Make a longer-term commitment to the CNI Student Engagement fellows and advisors on each campus.
Under the current coordination for the program, there is not enough time for CNI SE fellows to develop the measures necessary for successful student engagement with the greater campus community. The UC Office of the President renews engagement fellows on an annual basis, making it difficult for sustainability offices to plan long-term visions for engagement that these fellows can tackle. With a more robust, long-term commitment to the needs of the CNI SE fellows, campus advisors will be encouraged to invest more in these fellowship positions. Thus, we recommend multi-year planning on each campus for the CNI engagement fellows and research fellows, and more-robust support of these roles through the Office of the President. Our recommendations for strengthening facilitation of the program include:

- Developing multi-year continued funding for the CNI fellows rather than an annual renewal. A longer term for funding and support will allow for greater confidence and continuity in the student

engagement program. In addition, a greater commitment to the CNI fellow positions will allow for a standard to be set to hire fellows earlier in the year (end of Winter/beginning of Spring), which will allow for greater continuity with the additional recommendations below.

- More funding for materials that are specifically targeting engagement. Fellows and advisors could request and acquire additional funds for materials and services in support of a fellow's work through a small, CNI-specific fund that could be accessed with grants for specific projects.
- More coordination from UC Office of the President around these fellowships. A more robust facilitation of these roles, through coordination of projects, goals, outcomes, and the like will lead to clearer objectives across campuses and greater overall success of the program. In particular, UCOP should facilitate a process whereby campus mentors and UCOP program management staff collaboratively establish specific goals and desired communication outcomes for the program so that these can be clearly communicated to the fellows. For example, is it possible to outline for the fellows what the average UC student understands about the CNI? What are the specific actions that fellows should be encouraging UC students to take? Facilitation for the program could also extend beyond the goal setting phase and include systematic efforts to support cross-campus information sharing and collaboration, and a program for evaluating program outputs, outcomes, and impacts (See Recommendation 3).

The recommendations below provide a more comprehensive set of strategies for building a more robust student engagement program, but these cannot be achieved without a greater commitment to the fellowship positions and advisors in general.

2. Provide incoming CNI fellows with a toolkit of resources they need to fulfill their positions.

CNI fellows often lose valuable time for action while getting a feel for their roles. When they begin, many fellows lack understanding of the position duties, resources to turn to for guidance, and understanding of which types of activities can provide the most value for the initiative. Currently, basic background information can be difficult to find, thus we recommend expanding the efforts for easily accessible background information and stronger communication of these resources. We recommend that incoming CNI fellows be provided with an orientation packet and toolkit that includes:

- UC-wide and campus-specific CNI overview information, including:
  - an infographic that describes the current state of the CNI
  - a deeper introduction to the energy and funding strategies available and necessary to achieve carbon neutrality
  - short descriptions of and links to Climate Action Plans, reports, and other summaries of research relevant to UC carbon neutrality and the goals for the fellowship (e.g., communication and engagement approaches, social justice aspects of carbon neutrality strategies)
  - information about the systemwide and campus organizational structure, including a graphic of the leadership hierarchies at UC Office of the President and for each UC, and a graphic for the Working Group structure of the GCLC
  - information about previous accomplishments and future plans and goals.
  - dates and locations of GCLC Meetings
  - a basic glossary of definitions as well as commonly used acronyms for understanding CNI terminology

  This is crucial to providing transparency to the students dedicated to the initiative and will provide a framework that will shape the scope of the work they plan to achieve.
- Access to documentation of activities and accomplishments of previous CNI fellows (see recommendation 3 below).
- Access to a mini-library that contains additional resources that have helped previous fellows establish their goals, plan their fellowship activities, or fit into their roles. Such a library would be most useful if accompanied by a short blurb that describes the value of each resource and its location. To develop such a resource, each CNI fellow could be asked to submit recommended resources with short blurbs near the end of their fellowship term,

and CNI program staff could compile and manage this resource.

- Campus-specific lists of individuals and groups that CNI fellows can turn to with questions. These lists should include energy managers, sustainability staff and committee members, student organizations, and others who are directly or indirectly involved with the initiative so that fellows know who to turn to for guidance. Previous SE fellows should be involved in updating this resource yearly so that the contact list stays current.
- Information about non-UC campuses that are also aiming for carbon neutrality to provide for more ideas and direction.
  This reading material should be mandatory for the engagement fellows and publicly accessible to other students that are interested in getting involved with the CNI or other energy sustainability activities on their campuses.

3. Create and maintain a system for documenting projects and outcomes.

- Implement an evaluation program to document program performance for management purposes. Develop a template or questionnaire that each CNI fellow will use to report on their activities and their own evaluations of the outcomes of those activities. This questionnaire should be presented and discussed as part of the new fellow orientation so that fellows know 1)that tracking activities and outcomes is important, and 2) what kinds of things are considered to be positive outcomes for their project so that they can use this knowledge as part of their planning process. To streamline the process for collecting this data, the questionnaire could be set up as an online form (e.g., Google form) so that as fellows fill in the information, it goes directly to a centralized data record (e.g., a Google spreadsheet). As part of the questionnaire, fellows should document both process and performance metrics.
  i. Process metrics (inputs): Fellows report on the resources they utilized that were provided through their fellowship program, as well as additional resources to support their work that they were able to tap into on their own campuses.
  ii. Performance metrics (outputs, outcomes, impact): Fellows document what they produced or accomplished, the ways in which their work was used or implemented and how useful it was to their campus or the CNI program, and what was changed on their campus as a result of their work. To facilitate collection of information about the outcomes and impacts of Fellow projects, provide a battery of vetted survey and/or interview questions that students can select from to use in their own assessments of the outcomes and impacts of their work.

  Because evidence of impact may not be apparent over the time frame of an individual student's fellowship, a centrally administered plan for evaluating impact of the program should also be implemented over a longer time frame and a UC-wide scale. Syntheses of the information collected through the questionnaire, the results of any outcome assessments implemented by the fellows, and the longer-term impact evaluation should be reported on to the GCLC, UCOP leadership, and campus CNI mentors, and the fellows themselves. Because such evaluation and reporting would involve significant effort, a CNI fellow could be recruited each year to work with program leadership on implementing, analyzing, and presenting the evaluation program outcomes. Such an evaluation program would be critical to demonstrating the value of the program to campus leadership as part of discussions about ongoing funding support for the program.

- Create a portfolio that includes information collected through the evaluation program to provide new CNI SE fellows with easy access to valuable information and insights based on prior CNI work.

  Currently, access to records of what prior CNI fellows have done for their projects is not consistently provided. Furthermore, formal or informal ways of systematically documenting valuable insights gained while in the position to be passed on to the next fellow varies from campus to campus and advisor to advisor. While the creativity and

independence these roles offer is beneficial in the long run, initial lack of direction and understanding of position duties can result in an initial loss of momentum. A portfolio that includes information about all of the previous efforts put forth by the CNI student engagement fellows would help to minimize these inefficiencies. Such a portfolio, containing detailed project descriptions, photos and efficacy reports, measures of success, suggested adjustments for the next round, and ideas for other possible pathways for student engagement, would provide incoming fellows with inspiration and insights into projects that they can take on in their roles. While a primary motivation for development of this system would be to facilitate 'passing of the torch', strengthen institutional knowledge, and help to avoid 'reinventing the wheel', such record keeping and sharing would also be useful in other ways. For example, incoming fellows could review projects from other campuses and pursue implementation on their own campuses, facilitating dialogue between campuses that are pursuing similar endeavors. Additionally, since sustainability officers sometimes assign the projects on which CNI SE fellows work, this resource would help tailor and target Sustainability Officers' project ideas. Furthermore, potential CNI SE fellowship applicants could review the portfolio to understand whether the types of projects fellows typically pursue are of interest to them, or CNI SE fellowship applicants could be asked to describe how they would go about initiating one of the projects in the portfolio on their campus.

4. Provide mentorship structures (advisor-advisee and peer-to-peer) that will help new CNI SE fellows get up to speed quickly.

Mentoring relationships should be planned so that fellows have mentors to turn to for guidance throughout the course of their fellowships. Mentorship activities should include facilitated meetings between engagement fellows and advisors to develop and maintain a clear path, as well as meetings between engagement fellows to generate support and cross-collaboration between fellows. Orientation activities can serve as a good starting point, but without a structured mentorship plan, inter-fellow communication can easily decline afterward. In addition to inter-fellow and advisor communication, weekly conference calls with the UC Office of the President can help facilitate interactions between CNI engagement fellows. However, these calls have had poor attendance in the past due to students' varying class and work schedules within the typical work day hours. One way to overcome these hurdles is to develop a distributed seminar to be offered (for 1-2 units or course credit) in the fall of each year that fellows are required to attend (see recommendation 6 below). Conference calls as well as peer-to-peer, faculty, and advisor meetings can be held during part of this time.

5. Organize a retreat or orientation to facilitate the passing on of knowledge from one set of CNI SE fellows to the next and allow for some overlap between incoming and outgoing fellows for strong mentorship and continuity.

An incoming/outgoing joint retreat would be a useful opportunity to establish many of the recommendations set forth previously, including receiving and digesting the toolkit with context of the CNI, receiving the portfolio of previous work, and using these resources to set a project work plan with outgoing fellows, campus advisors, and other key stakeholders like Office of the President staff. At a retreat, students can also begin to develop relationships with other engagement fellows, including those at other UC campuses, to facilitate cross-collaboration and schedule regular progress meetings with the faculty and staff most closely involved with their projects. This retreat would allow for some overlap between incoming and outgoing fellows, allowing for the outgoing fellows to properly train the incoming fellows so that they can get a proper understanding of their responsibilities and have immediate and direct mentorship from the start. The outgoing engagement fellows can work with the incoming fellow and the campus advisor to develop a work plan for the fellowship during the first few weeks of the incoming fellow's term. This can lead to a more successful development of a long-term engagement project with concrete goals and actionable steps, and ways to track progress.

Retreat Timing Considerations

Previous retreats have been effective in generating momentum among fellows, but have occurred halfway through the fellows' terms, leaving only five months for project implementation. If timed correctly, such a retreat would allow outgoing fellows to present the work that they have done and offer ideas to incoming fellows regarding what they see as next steps for the program as a whole. To enable these types of interactions, new fellows would need to be selected much earlier in the year, such as during the end of Winter or beginning of Spring terms (which is only possible with a longer-term commitment to the program (see Recommendation 1). Hosting a retreat during the summer (e.g., at CHESC) has been considered; however, it is likely that a good number of fellows, such as those graduating, will have other summer projects that make it difficult for them to attend. Having a conference earlier than CHESC would facilitate the growth and sharing that we want to take place, in addition to allowing the students to get feedback from colleagues so that what is presented at CHESC is more robust. Ideal timing for a retreat could be either in early April, being respectful of the time constraints of students in both semester and quarter systems.

6. Allow for a training period for incoming fellows through a fall seminar to set a standard for the position and fuel momentum.

In order for fellows to serve as a hub for campus and UC-wide CNI student engagement efforts, they need to learn a significant amount about previous and current progress toward the CNI. To provide structure and facilitate commitments for this type of learning, we recommend setting up a distributed seminar (also mentioned in Recommendation 4) that is managed through collaboration between CNI fellow mentors, sustainability staff, and/or other faculty on different campuses or at the UC Office of the President. This will facilitate CNI fellows' access to and acquisition of expertise in communication research efforts, insight into the technical and financial aspects of CNI, and mentorships by faculty, staff, or guest speakers. Guest speakers can provide a fresh perspective to the program and providing this resource can be used as a platform to allow the initiative to engage with the greater campus community. This seminar could be open to all students in order to set up a framework for more student research opportunities through CNI and to generate broader student interest, or it could be limited to CNI fellows in order to streamline productivity and attention to fellows' projects. The first half of the course meeting time could be dedicated to providing the background information and toolkits discussed in the previous recommendations, in addition to presentations held by faculty, administration, or other students. The second half of the course could be dedicated to providing a structured meeting time for the mentorships discussed in the previous recommendations, or providing space for students to work independently on their projects with the support of advisors to be there if needed.

Conclusion

CNI SE fellows face high financial, logistical, institutional, social, and intellectual barriers to successfully engaging students through projects and initiatives. The financial barriers can be addressed by developing a long-term funding source for CNI SE salaries and project implementation. A toolkit and project documentation system can help resolve intellectual, institutional, and logistical challenges. Formal mentorship structures and a well-timed retreat will efficiently mitigate all aforementioned barriers through extensive knowledge-transfer and network strengthening. Finally, a training period in the fall will help fellows quickly acquire the necessary knowledge and support structures for their projects, empowering them to continue building momentum throughout the year.

6.2. Information and Communication Design Research Results

6.2.1. UC Sustainability-Themed News Stories

Introduction

While the UC system has made great strides towards carbon neutrality in recent years, it still remains far short of net zero. As the UC Carbon Neutrality Initiative (CNI) nears its 2025 deadline, it becomes vitally important that all avenues to reach zero net carbon emissions be explored. An analysis university internal media coverage was conducted to determine how these communication channels influence perceptions of the initiative and how they might be utilized to support the initiative.

Past research shows that people often utilize mass media to obtain information regarding climate change and other environmental concerns[4,5]. It has also been demonstrated that the media are highly influential in bringing public attention to current issues like carbon neutrality. Research also supports the notion that mass media are not as reliable a source as the public seems to believe. Media sources cherry pick which stories reach the public eye in a phenomenon commonly referred to as “agenda-setting.” In this way public communication sources highlight which issues are of the most import to them and which are not. In addition to agenda setting, media sources often “frame” the stories that they present to their audiences in a number of unique ways that have different impacts on certain groups of people. Nisbet[6] defines “frames” as “interpretive storylines that set a specific train of thought in motion, communicating why an issue might be a problem, who or what might be responsible for it, and what should be done about it.” For example, a common frame for climate change is public accountability[6]. This frame is often used as a method of community engagement on the basis of the public’s role in climate change. The manner in which environmental problems and potential solutions are portrayed by the media can influence public views about the seriousness of the hazard and whether and what types of actions may be perceived as appropriate[7–10]. We have applied these principles to an examination of how the university media discuss the CNI..

Since all campuses have public communication offices as well as sustainability offices that frequently publish news articles, one can determine how UC is currently framing carbon neutrality by looking at the stories that reach the public and whether they increase engagement. Because the media plays such a large role in agenda setting and framing, it is of great significance that university communications be treated with the importance that they merit. Examining how UC portrays and frames sustainability issues such as the CNI will provide a baseline for comparing future CNI communication efforts. To generate this baseline, we collected articles on sustainability from all ten UC campuses and the UC Office of the President (UCOP). We analyzed these articles to identify the major themes and concepts. We were specifically interested in whether there were differences across the campuses in how the themes were brought up, relationships between the themes, and relationships between themes and how many times the story was viewed.

Methods

The research involved a media content review of the news items and press releases generated by each UC Public Communications Office and Office of Sustainability, including UCOP’s. Six campus websites included a dedicated link to their public communication newsletter materials, while eight of the sustainability office websites included relevant topical links. After collecting the sustainability articles from these public communication and sustainability office websites, the selection of articles were refined to only include articles that contained the following keywords: "Sustainability," "Carbon Neutrality," and "Carbon Neutral." The method for finding articles varied from campus to campus, because some had documents organized topically (e.g., articles could be accessed through drop-down index menus), while others did not have this type of functionality but offered a search feature. When indices were available, we used the sustainability-related keyword. When search functionality was available, we searched for the terms listed in the appendix text. When both were available, we did both. Title, publication date, and URL were collected for all items

from Office of Public Communication/Office of Sustainability from the beginning of 2017. All duplicate results were excluded.

This initial search yielded 1,059 sustainability-centered articles. We a developed a code to filter news stories focused on some aspect of sustainable energy, energy or fuel efficiency, carbon footprint or carbon neutrality, or other activity with a focus on Scope 1, 2 or 3 emissions.* Two coders then marked whether each article qualified for the code, excluding duplicate articles and articles from non-UC third-party sources. An intercoder reliability of 0.88 (Cohen's Kappa) was obtained. A total of 372 articles were then selected for coding in order to reveal themes contained therein.

Main, overarching categories were identified via open coding and then broken down into smaller subsets. The final categories included: Featured Audience, Frame, and Story Type with each having numerous subsets that could be coded as a zero, one, two, or possibly three. Primary themes within the articles were coded with a one (1) for both Audience and Frame while secondary themes were indicated with a two (2); any non-present themes were indicated with a zero (0). Story Type subsets were only labeled with a zero or one (either not present or present). The single exception to this system was Timing, a subset of Story Type. This code was indicated with a zero for "not related to event or happening," one for "distant past," two for "recent past," and three for "upcoming." The finalized system allowed for identification of certain articles as representative of one major featured audience, one major featured frame, and various secondary audiences and frames. After preliminary analysis, the coding guide was condensed to 35 codes. Random 240 articles were coded by multiple researchers (Krippendorf's alpha of 0.80).

* Our detailed screening criteria were as follows: "Article is focused on some aspect of sustainable energy, energy or fuel efficiency, carbon footprint or carbon neutrality, or other activity with focus on Scope 1, 2 or 3 emissions. Also includes articles related to campus greenness or sustainability in general (e.g., awards) if no specific non-energy aspect of sustainability is the main focus of the article (applies to campus actions only). Also includes articles that focus on efficient use of space (e.g., office, lab, living spaces) and/or buildings involved in energy efficiency/conservation (i.e. LEED certification). A focus on alternative transportation, sustainability-oriented training programs, and/or climate action (defined as steps towards limiting human-caused climate change) warrants inclusion. Includes description or mention of the Carbon Neutrality Initiative (e.g., CNI fellows). Articles that focus on recycling, plastic use, waste management, sustainable food, or water management are excluded unless they refer to energy conservation/efficiency. Mention of carbon dioxide, carbon storage, and greenhouse gases (GHGs) will be excluded unless linked to human activity; black carbon or soot are excluded unless their role in CO2 production is mentioned. Should fossil fuels be mentioned, they must include some aspect of anthropogenic GHG emissions. Includes mention of infrastructure for renewable energy (e.g., energy storage, batteries), but excludes mention of energy infrastructure that isn't linked to energy efficiency/renewables/energy storage. Air pollution is not included unless linked to anthropogenic GHG emissions. Global warming/climate change is not included unless described as a process of anthropogenic GHG emissions."

Table 18. News analysis: Condensed coding guide

Theme	Description
UC Staff	Articles featuring a member of a UC faculty, administration or staff.
Students	Article featuring students or alumni of a UC campus.
Alternative Energy	Renewable energy sources, such as wind, solar, biofuel, etc. Different modes of fossil fuel use are excluded.
Belief Systems	Relates to particular actions or goal from belief systems (e.g., religion, ethical or moral obligations). Includes environmentalism and political affiliations.
Architecture	Highlights architecture or building design concepts.
Carbon Offsets	Any mention of a carbon offset, or carbon offset program.
Cap and Trade	Any mention of a cap and trade system or policy.
Renewable Credits	Any mention of credits, or policy that incentivizes renewable energy through such market mechanisms.
Carbon Neutrality	Any mention of the UC Carbon Neutrality Initiative or UC carbon neutrality goals, actions or programs.
Collective Action	An article that encourages people to adopt a behavior to reach a common goal.
Individual Action	An article that focused on a specific individual action.
Energy Efficiency	Use of less energy to provide the same service. Involves reducing or going without a service to save energy.
Economic Development	Contributing to economic prosperity either locally, nationally, or globally, such as in the opening of markets, price reduction of commodities, business opportunities, or job creation.
Education	Refers to activities or programs (formal or informal) focused on teaching and learning. Includes references to curriculum development and educational opportunities. Includes training, internships and professional development.
General Emphasize Problem	Emphasizes a problem and/or provides a solution at a general level.
General Emphasize Solution	
UC Emphasize Problem	Emphasizes a problem and/or provides a solution specific to the university.
UC Emphasize Solution	
Entertainment	Refers to activity that is intended to provide enjoyment, diversion, or leisure.
Agriculture	Related to production, distribution, and consumption of crops, livestock, foodstuffs, etc.
Funding	Related to the provision of money to an individual, organization, research project, or other sustainability-oriented endeavor. Does not include research funding grant statements
Regulation	Refers to conditions or changes coming from outside the university through local, state, federal, and international regulations.
Health	Refers to events or conditions that promote or diminish the health of individuals or groups.
Innovation	Refers to use of innovation (technological, organizational, social) to meet goals or find solutions
Measurement	Presents a numerically quantifiable relation to the situation/action at hand or in future.
Leadership	Relates particular actions or goals to taking responsibility or a leadership role from campus organizations.

Theme	Description
Pollution	Negative feedback caused by the degradation of the environment (all pollution not included in carbon emissions)
Social Justice	Approach that acknowledges the multiplicity and overlapping of categories of justice (race, gender, environment), as well as the intersectionality of experience along these categories, and the complementary nature of structures of privilege and oppression. Interrogates the ways in which certain forms of power perpetuate forms of oppression.
Transportation	The act of carrying someone from one place to another via vehicles of any kind.
Waste	Systems for managing and/or treating waste. Includes reuse, repurposing or recycling of waste materials.
Water	Related to status or management of water resources
Event/Performance	A notice, or reference, to a specific campus event or performance.
Award	Recognition for campus and/or individual efforts
Discovery/Profile	Refers to research findings or empirical evidence that supports a particular conclusion, plan, or recommendation.
Opinion	Reflective piece written by faculty, staff, or student. Does not include the reporting staff from the respective Communications Office.

Results

The most frequently mentioned theme (Table 19) was a feature on faculty, staff, or administration. This theme was present in 85% of articles from across all the campuses. A profile on a discovery or event were the next most common themes (mentioned in 44% and 37% of the articles respectively). The articles also mentioned various sustainability issues including alternative energy, energy efficiency, carbon neutrality, pollution, carbon offsets, cap and trade, and renewable energy credits. The most commonly seen themes were alternative or renewable energy (mentioned in 33% of the articles), energy efficiency measures and efforts (mentioned in 31% of the articles) and new technological innovations (mentioned in 30% of the articles). Surprisingly, the Carbon Neutrality Initiative was only brought up in 19% of the articles. However, this is far higher than carbon offsets and cap and trade, both of which came up in >1% of the articles. Carbon neutrality, carbon offsets, cap and trade, and regulations combined were found to be in 35% of the articles.

There were differences for how often different themes were brought up across the different campuses (Table 20). For example, a higher proportion (63%) of articles from UC Merced featured students than the other campus (chi-square = 17.4; df = 11; p value = 0.10). Similarly, a higher proportion (chi-square = 77.7; df = 11; p value < 0.05) of stories from UC San Francisco brought up the relationship between health and sustainability than the other campuses (67% mentioned in 67% of UCSF articles versus 8% from the other campuses). There were differences in the proportion of articles mentioning the Carbon Neutrality Initiative based on campus (chi-square = 18.2; df = 11; p value = 0.08). UC San Francisco had the highest proportion (37%) of articles specifically mentioning the initiative, followed by UC Santa Barbara (29%) and the UC Office of the President (28%).

Table 19. News analysis: Percentages of themes present in the sample set of 337 news stories

Theme	Present in % Articles
UC Staff	85%
Discovery/Profile	44%
Event/Performance	37%
Collective Action	37%
Students	35%
Measurement	34%

Theme	Present in % Articles
Alternative Energy	33%
Energy Efficiency	31%
Funding	30%
Innovation	29%
Award	28%
Education	25%
Transportation	24%
Architecture	24%
General Emphasize Solution	23%
Economic Development	22%
General Emphasize Problem	21%
Agriculture	21%
Water	21%
Regulation	19%
Carbon Neutrality	19%
Individual Action	19%
Waste	15%
Health	14%
Pollution	14%
Leadership	13%
Entertainment	12%
UC Emphasize Solution	9%
Social Justice	8%
Belief Systems	8%
UC Emphasize Problem	3%
Opinion	3%
Carbon Offsets	1%
Cap and Trade	1%
Renewable Credits	1%

Table 20. News analysis: Distribution of themes by campus

Theme	Total	UCB	UCD	UCI	UCLA	UCM	UCOP	UCR	UCSB	UCSC	UCSD	UCSF
UC Staff	85%	76%	30%	76%	55%	18%	94%	67%	15%	36%	79%	61%
Discovery/Profile	44%	24%	12%	30%	45%	3%	61%	39%	0%	24%	42%	33%
Event/Performance	37%	24%	12%	45%	15%	15%	21%	27%	9%	15%	33%	45%
Collective Action	37%	33%	9%	45%	30%	12%	27%	15%	12%	6%	27%	42%
Students	35%	33%	6%	36%	9%	15%	55%	15%	12%	12%	27%	24%
Measurement	34%	27%	21%	9%	24%	12%	42%	24%	9%	9%	30%	36%
Alternative Energy	33%	27%	6%	30%	9%	6%	76%	21%	9%	9%	30%	12%
Energy Efficiency	31%	39%	12%	15%	12%	9%	67%	15%	9%	3%	15%	21%
Funding	30%	21%	9%	30%	9%	9%	27%	30%	6%	12%	45%	18%
Innovation	29%	24%	0%	15%	21%	3%	45%	24%	0%	18%	45%	9%
Award	28%	33%	6%	15%	6%	15%	27%	21%	9%	15%	39%	12%
Education	25%	21%	9%	33%	6%	12%	24%	15%	9%	9%	15%	30%
Transportation	24%	18%	15%	15%	12%	6%	39%	18%	9%	6%	15%	15%
Architecture	24%	48%	9%	12%	18%	12%	21%	6%	9%	9%	12%	15%
General Emphasize Solution	23%	15%	3%	9%	24%	6%	42%	15%	3%	6%	21%	15%

Theme	Total	UCB	UCD	UCI	UCLA	UCM	UCOP	UCR	UCSB	UCSC	UCSD	UCSF
Economic Development	22%	27%	6%	6%	18%	6%	33%	15%	3%	9%	21%	15%
General Emphasize Problem	21%	18%	12%	12%	33%	3%	0%	18%	0%	6%	24%	21%
Agriculture	21%	15%	9%	27%	6%	12%	27%	3%	6%	9%	12%	24%
Water	21%	27%	9%	12%	24%	9%	12%	9%	12%	9%	15%	12%
Regulation	19%	9%	6%	12%	30%	6%	21%	9%	3%	3%	27%	12%
Carbon Neutrality	19%	21%	0%	18%	3%	6%	27%	6%	6%	0%	15%	30%
Individual Action	19%	15%	0%	9%	9%	0%	36%	6%	3%	9%	18%	21%
Waste	15%	18%	6%	15%	3%	3%	18%	6%	9%	3%	6%	18%
Health	14%	9%	0%	3%	9%	0%	3%	6%	0%	0%	18%	55%
Pollution	14%	3%	9%	12%	15%	0%	12%	9%	3%	3%	24%	12%
Leadership	13%	9%	3%	15%	12%	6%	18%	9%	3%	0%	3%	15%
Entertainment	12%	9%	3%	9%	3%	9%	0%	12%	0%	9%	18%	9%
UC Emphasize Solution	9%	3%	0%	3%	0%	0%	39%	6%	3%	0%	3%	9%
Social Justice	8%	9%	0%	15%	3%	6%	0%	3%	0%	9%	3%	12%
Belief Systems	8%	12%	3%	3%	9%	3%	3%	0%	0%	6%	3%	15%
UC Emphasize Problem	3%	0%	3%	3%	0%	0%	3%	6%	0%	0%	0%	9%
Opinion	3%	6%	0%	0%	6%	0%	0%	0%	3%	0%	0%	3%
Carbon Offsets	1%	0%	0%	3%	0%	0%	0%	0%	3%	0%	0%	0%
Cap and Trade	1%	0%	0%	0%	3%	0%	0%	0%	3%	0%	0%	0%
Renewable Credits	1%	3%	0%	0%	0%	0%	0%	0%	0%	0%	3%	0%

We were able to collect page view data for 72 of the 240 articles randomly sampled. Articles that contained the theme social justice received fewer page views than articles that did not contain this theme (t = 2.44; p value = 0.02). There was no significant difference in the page view numbers between articles that mentioned the Carbon Neutrality Initiative versus those that did not mention the Carbon Neutrality Initiative.

Discussion

It was found that carbon neutrality is only mentioned in a small portion (19%) of sustainability related articles published by UC media offices. UC articles are more likely to feature faculty accomplishments, renewable energy projects, and ecology related events instead. Additionally, each UC publishes different sustainability related content. This may be due to differences in audience, location, and preferences. For example, UC Irvine is far more likely to publish an article relating to agriculture than UCLA, an unsurprising fact considering the addresses of each school; one in Orange County and the other in the heart of Los Angeles respectively. Also, previous efforts have not identified a strong relationship between the CNI and the student body, an issue that may be rectified via media agenda setting and framing.

It has been shown that personal identification with a cause often results in higher levels of participation[11]. Our news analysis shows that there is currently a significant relationship between featuring students and mentioning the CNI (r=.26). While this is a moderate correlation, it could be much higher. In order to garner a wider, more involved audience, the university and campus communications offices might consider mentioning students and student led accomplishments more frequently in conjunction with the CNI. Moreover, it has been shown that a threat to public health is an incentivizing frame, especially when applied to climate change and carbon neutrality related issues[6,12,13]. Combined, the university media only mention public health in relation to sustainability in 14% of news articles. Perhaps if this frame were utilized more frequently in UC media, a greater number of students, staff, and faculty would participate in the CNI.

In conclusion, media content published by UC offices regarding sustainability is lacking in information regarding carbon neutrality, an issue that merits greater attention. Also, UC news stories tend to exclude the widest segment of their population: students. With more articles aimed at student engagement with sustainable efforts, it is possible that the CNI will see higher levels of participation from the student body. Finally, drawing attention to climate change and carbon neutrality on the basis of their implications for public health and well-being may be an effective way to foster greater involvement system-wide.

Figures

Figures 86 through 96 show the percentage of articles in which a theme occurred for each campus compared to all coded articles in the study.

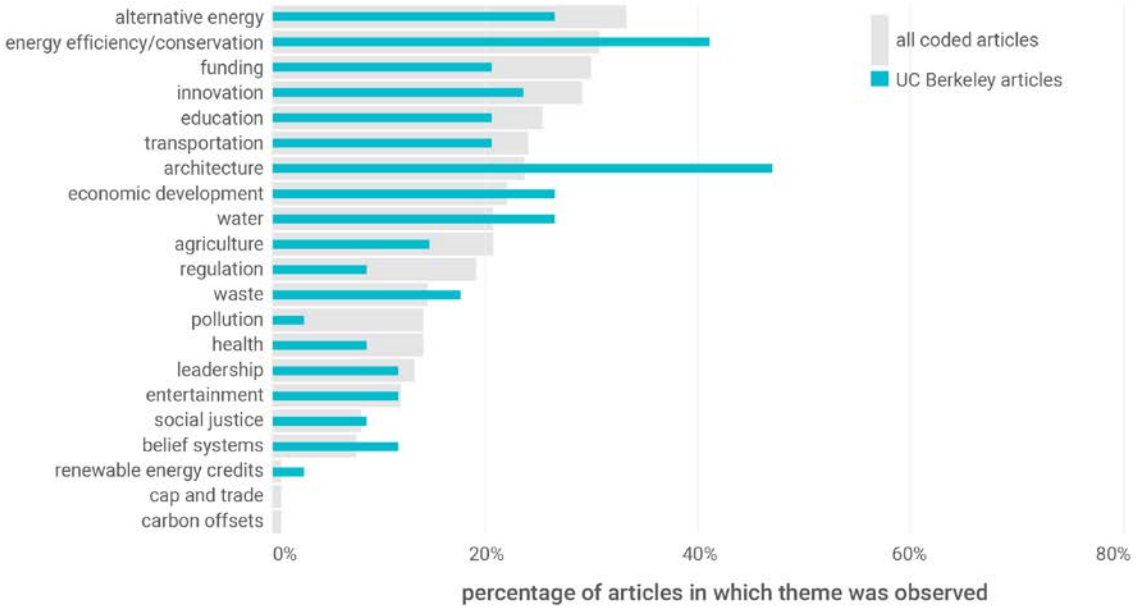


Figure 76. News analysis: Frequency of theme occurrence, UC Berkeley. Frequency of theme occurrence in coded articles from UC Berkeley (n=34) and reference frequencies for all coded articles (n=241)

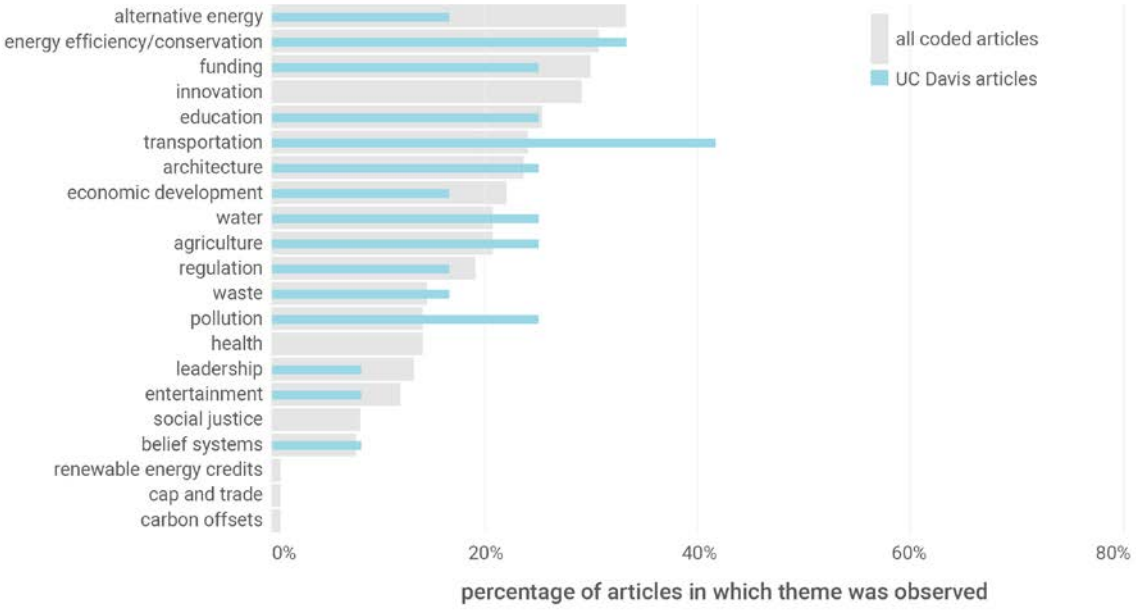


Figure 77. News analysis: Frequency of theme occurrence, UC Davis. Frequency of theme occurrence in coded articles from UC Davis (n=12) and reference frequencies for all coded articles (n=241)

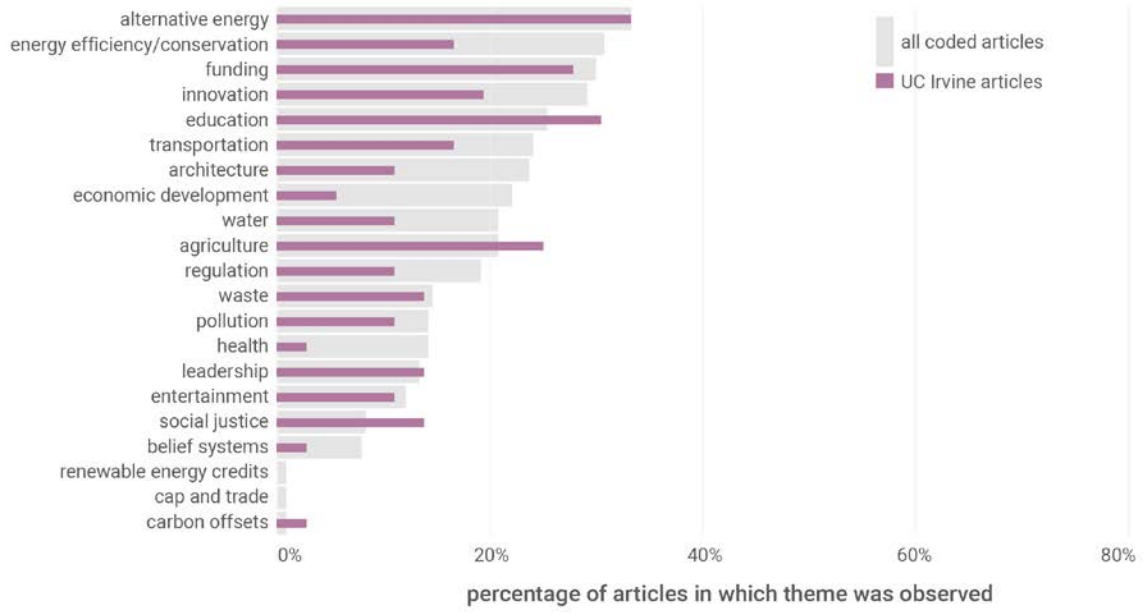


Figure 78. News analysis: Frequency of theme occurrence, UC Irvine. Frequency of theme occurrence in coded articles from UC Irvine (n=37) and reference frequencies for all coded articles (n=241)

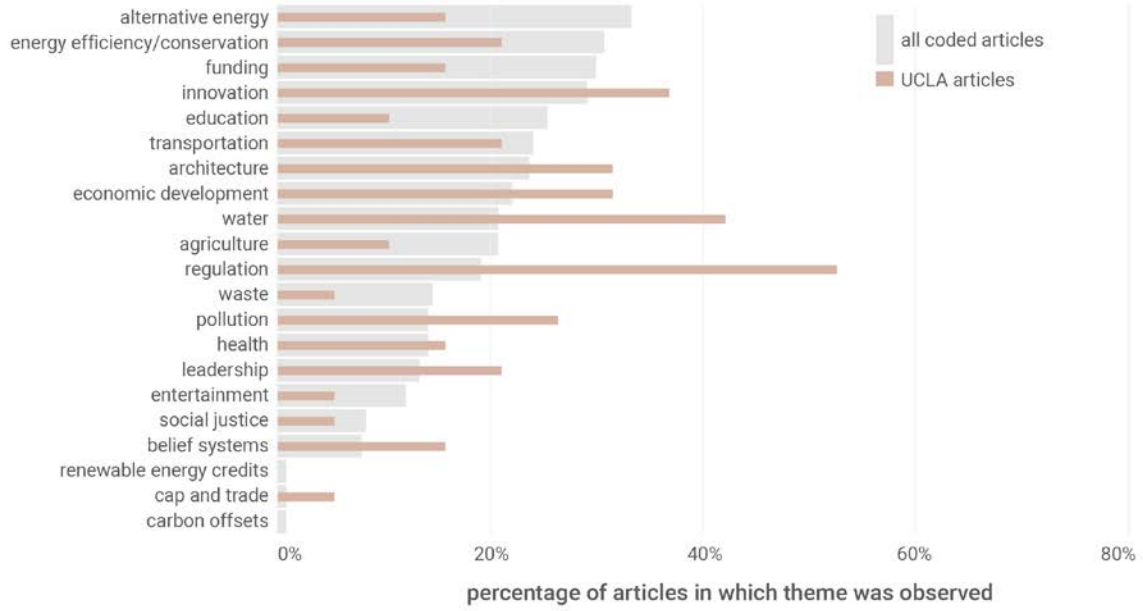


Figure 79. News analysis: Frequency of theme occurrence, UCLA. Frequency of theme occurrence in coded articles from UCLA (n=19) and reference frequencies for all coded articles (n=241)

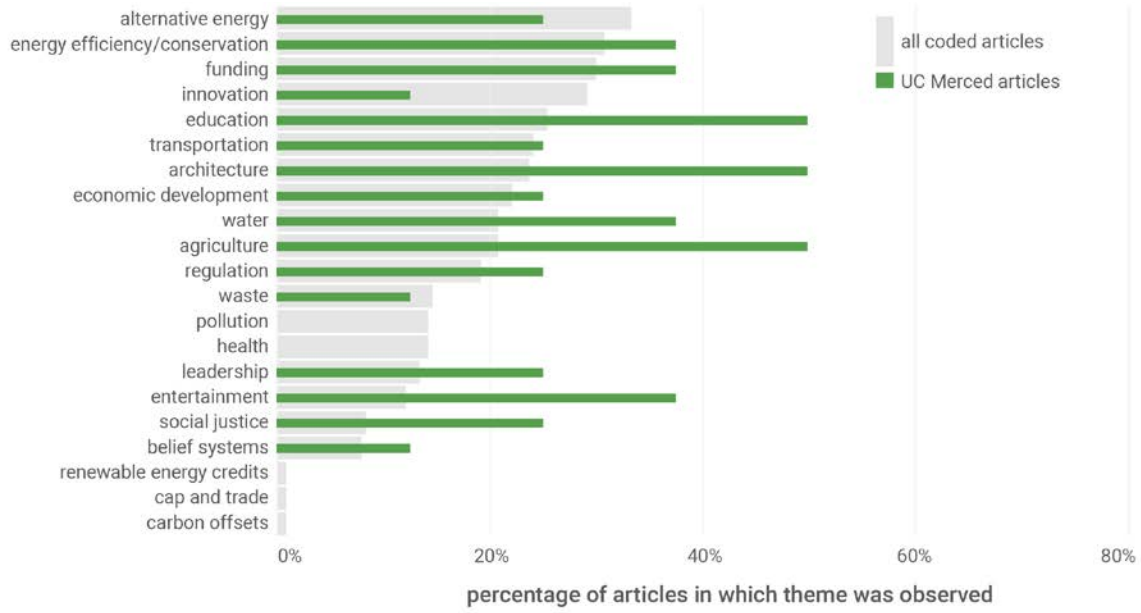


Figure 80. News analysis: Frequency of theme occurrence, UC Merced. Frequency of theme occurrence in coded articles from UC Merced (n=8) and reference frequencies for all coded articles (n=241)

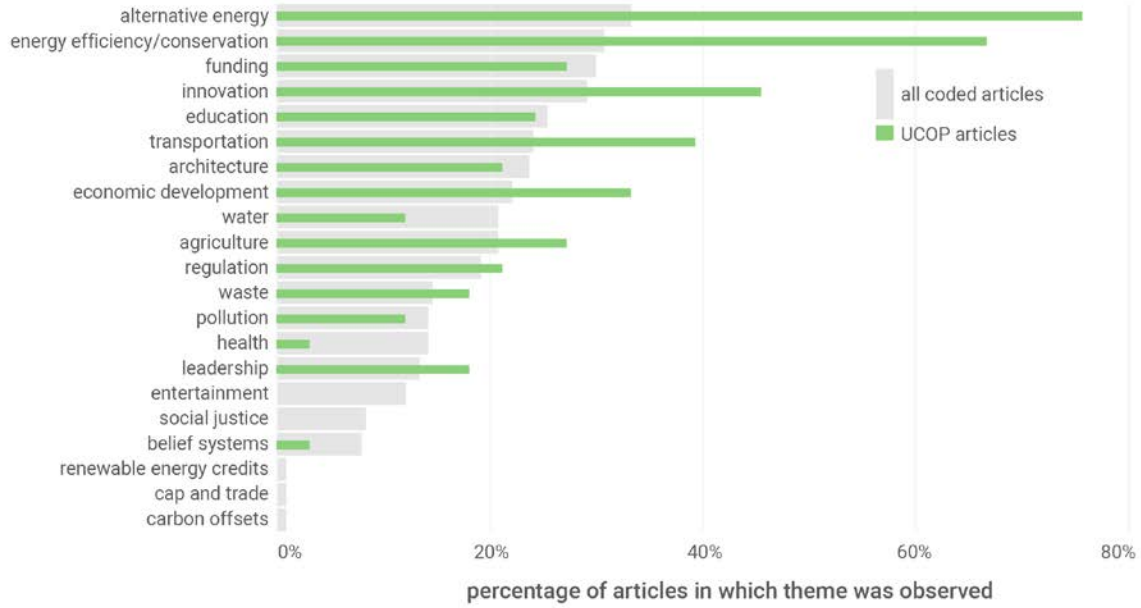


Figure 81. News analysis: Frequency of theme occurrence, UCOP. Frequency of theme occurrence in coded articles from UC)P (n=33) and reference frequencies for all coded articles (n=241)

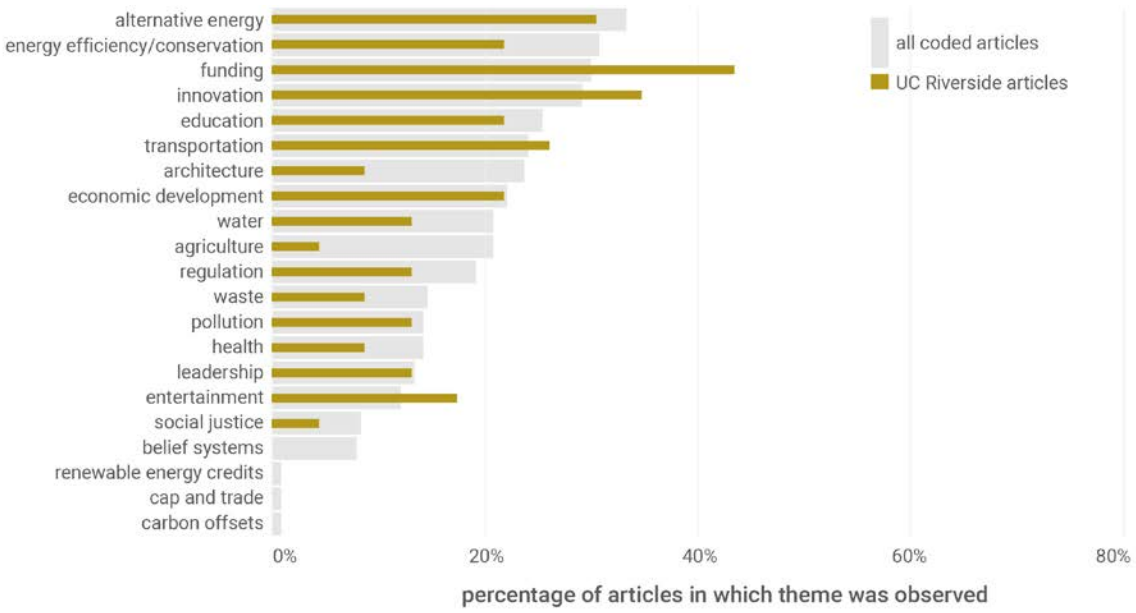


Figure 82. News analysis: Frequency of theme occurrence, UC Riverside. Frequency of theme occurrence in coded articles from UC Riverside (n=23) and reference frequencies for all coded articles (n=241)

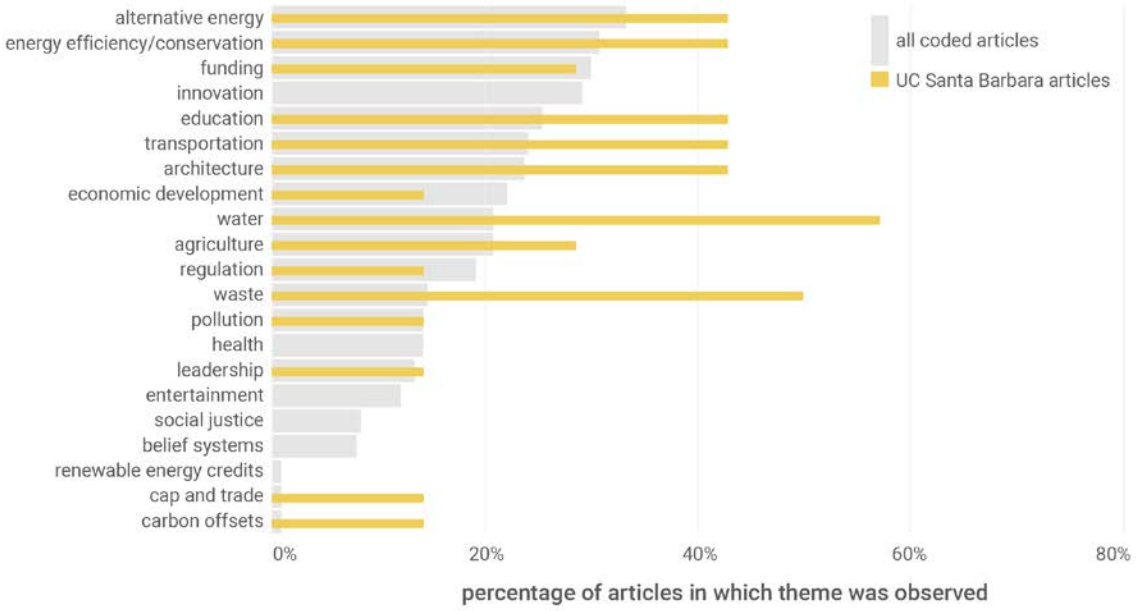


Figure 83. News analysis: Frequency of theme occurrence, UC Santa Barbara. Frequency of theme occurrence in coded articles from UC Santa Barbara (n=7) and reference frequencies for all coded articles (n=241)

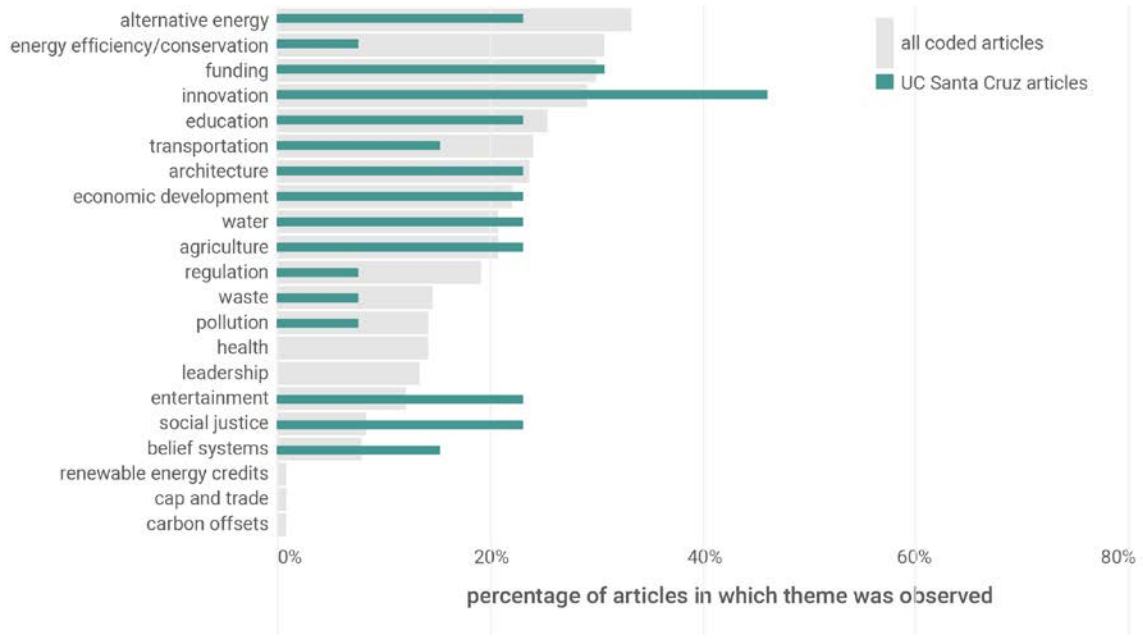


Figure 84. News analysis: Frequency of theme occurrence, UC Santa Cruz. Frequency of theme occurrence in coded articles from UC Santa Cruz (n=13) and reference frequencies for all coded articles (n=241)

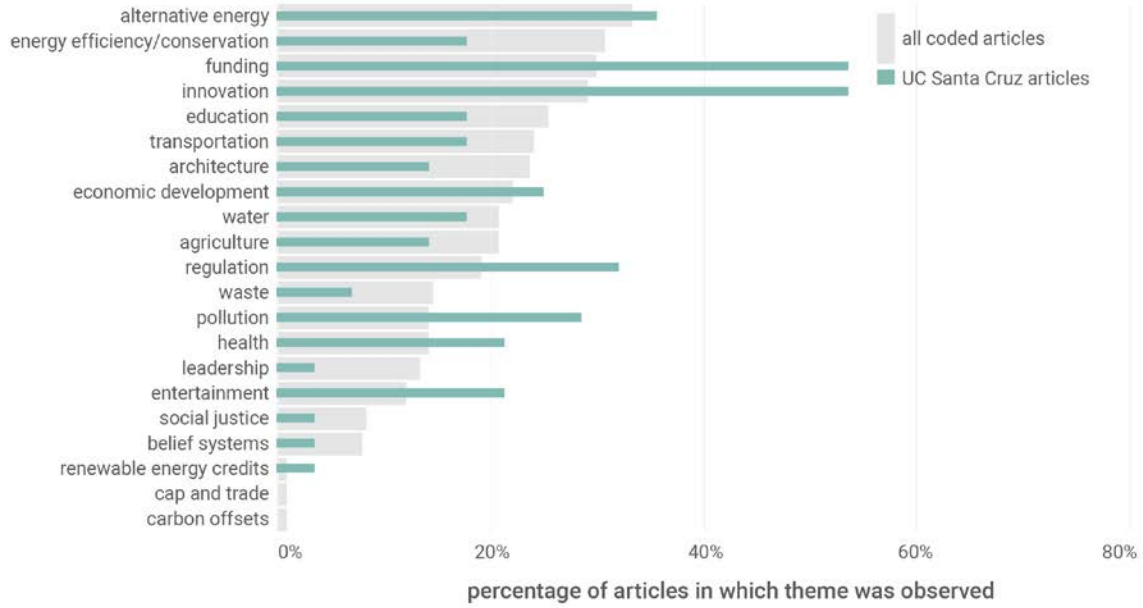


Figure 85. News analysis: Frequency of theme occurrence, UC San Diego Frequency of theme occurrence in coded articles from UC San Diego (n=28) and reference frequencies for all coded articles (n=241)

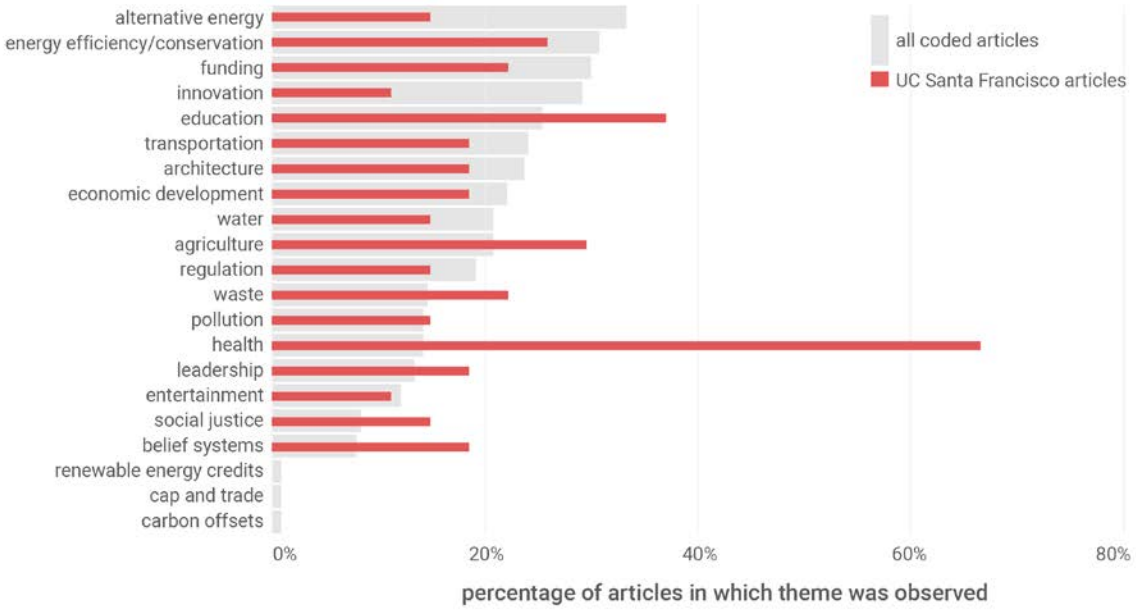


Figure 86. News analysis: Frequency of theme occurrence, UC San Francisco. Frequency of theme occurrence in coded articles from UC San Francisco (n=27) and reference frequencies for all coded articles (n=241)

6.2.2. Feedback for Energy Dashboard Design

Through The Green Initiative Fund at UC Santa Barbara, funding was acquired to conduct research on how best to engage students, staff, and faculty in the effort to achieve energy sustainability (especially as related to Scope 1 and 2 emissions) at UCSB. In coordination with UCSB Facilities Management, researchers conducted 10 semi-structured interviews with 11 respondents from around campus. Respondents included faculty, building managers, housing and dining services staff members, upper-level administration, and students.

Respondents spoke of their own experiences thinking about energy use on campus as well as their views on how energy data could facilitate problem-solving or decision-making for themselves or other campus groups. Respondents were also shown four visuals (See Figure 87), and researchers recorded their reactions to the information presented.

Findings

All respondents expressed their interest in knowing about campus energy use, with varying ways they wanted information presented to them. Students were predominately interested in data regarding personal energy consumption, while staff and faculty were interested in the data that could inform them of their operational energy use or facilitate educational or informational campaigns for colleagues or students.

While students were more interested in the 'cartoonish' visuals, they wanted the data behind the visuals in order to help inform fellow students through environmental initiatives or campaigns. Students, as well as staff, noted that they would want to see the data linked with actionable items that could help facilitate energy sustainability on campus, whether through personal behavior change or taking part in decision-making.

Finally, researchers found that respondents in upper administration positions felt a pressure to maintain the campus's outward reputation as a leader in sustainability. Administrators expressed the need for all comparison visuals to be "apples to apples" in order to show the campus in a fair light.

Recommendations

Based on these findings, we have two recommendations:

Recommendation 1

Create an interactive website that includes both personal energy consumption and building-level energy data. Provide engaging visuals and stories on how an individual on campus can make a change regarding energy use, or how changes to infrastructure, energy management practices, or purchasing decisions lead to tangible reductions in energy use

Researchers found that certain visualizations resonated with different stakeholders. Create a website that provides both the visual aspect as well as the raw data such that interested stakeholders can learn more about campus energy use. In addition, it is important to not only provide the data, but provide information on what the data is portraying and how the individual can either change their behavior to reduce energy use on campus or how they can get involved with the decision-making process to advocate for energy sustainability. Students expressed interest in using this type of data for educational or informational campaigns. Provide students with information on where UC Santa Barbara can improve as well as some of the strategies discussed for becoming more energy sustainable.

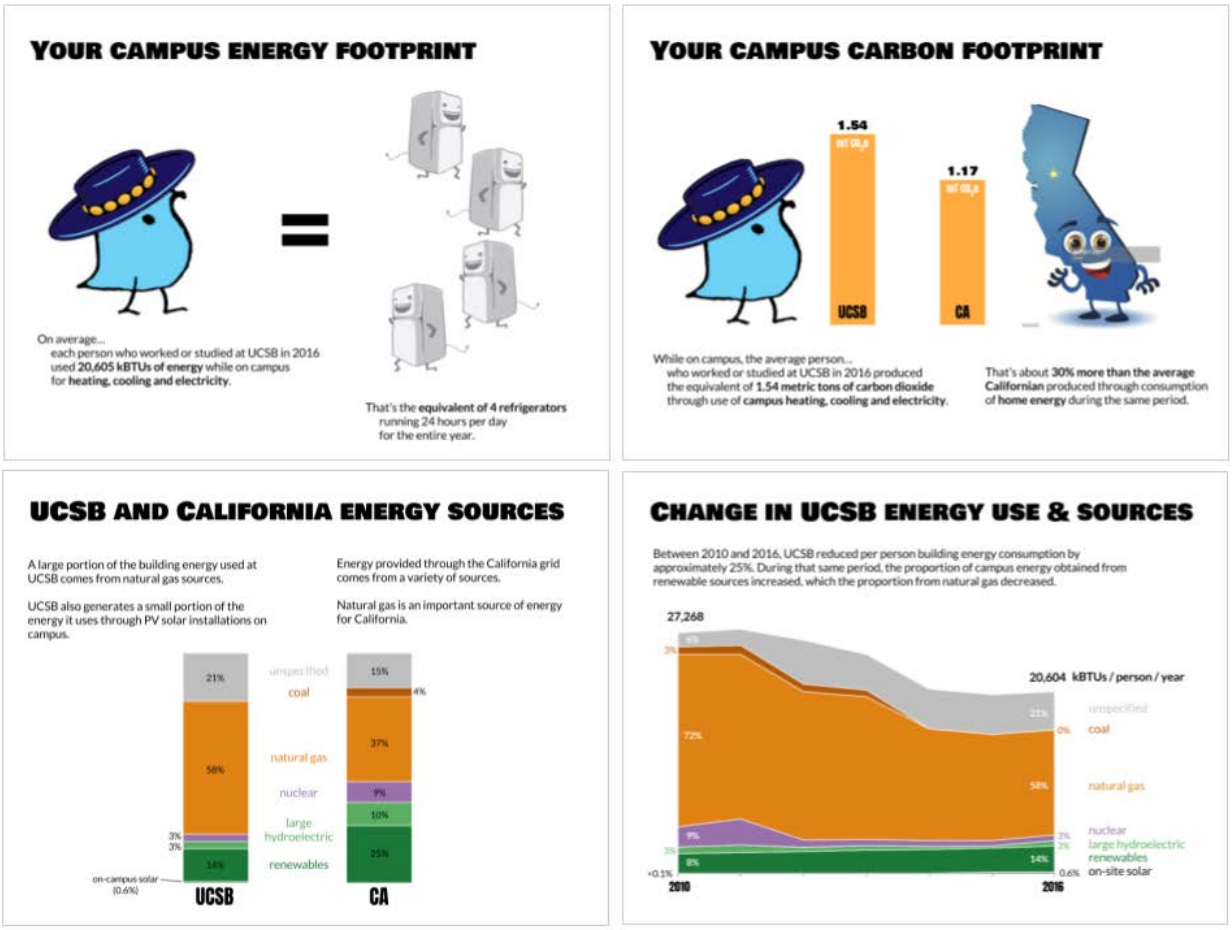


Figure 87. Visuals used in interviews.

Recommendation 2

Highlight campus energy solutions when presenting data on energy use on campus to increase transparency and create an active, community-driven learning environment

Administrators and other stakeholders want to ensure a positive reputation regarding sustainability at their individual campuses. This desire to maintain a green reputation leads to a hesitancy in displaying all of the data regarding energy use and sources, in case some of the data shows the campus in a bad light. In order to overcome reputational concerns, the data should be shared along with possible campus energy solutions to create an atmosphere that encourages frank and open discussion on how both individuals and the campus can do better. This will provide administrators and people tasked with sustainability initiatives an alternative to simply touting green achievements for reputation building to highlighting a community that collects and shares data in order to solve challenging problems like carbon neutrality.

Theory of Change Process and Infographic

As part of this research, a Theory of Change process was undertaken and corresponding infographic was developed. Theory of Change is a rigorous formal process in which project stakeholders map out the actions and conditions they believe are necessary in order to achieve an ultimate desired outcome. The TOC This approach identifies the desired long-term goal and then works backward to fill in the "missing middle" of the process. The outcomes are depicted graphically in a format also referred to as a Theory of Change[14].

The theory of change resulting from our research included not only the steps required for development of a UCSB energy dashboard tool or website, but also steps associated with creating the conditions and engagement that will allow the tool to have an impact once launched. The following steps are key to achieving greater campus energy sustainability through a campus energy dashboard (See Appendix 6.4 for infographic rendering):

- Tool and data development. UCSB creates and iteratively refines an energy dashboard to present information and data related to campus energy sources and consumption rates. Dashboard design process includes involvement and feedback from potential champions so that is well tuned to the needs of those most likely to use and promote it.

- Communication, education and outreach actions. Staff from the campus public communication and sustainability offices highlight the dashboard launch and champion-led projects that involve its use.

- Awareness/engagement outcomes. Stakeholders become aware of their energy use and learn about the social and environmental impacts of their energy use. They are motivated to participate in voluntary programs that reduce energy demand, to participate in centrally managed energy-saving programs, and to advocate for campus energy sustainability.

- Behavior-change outcomes. Broad-based support for budgeting processes and decisions that support campus energy sustainability; behavior change to reduce energy consumption in the use of space and equipment

- Budgeting outcomes. Energy cost savings reinvested in generation or purchase of renewable energy and further energy sustainability measures

- Campus energy outcomes. Increased proportion of campus energy from renewable sources; decreased per capita and energy consumption; lower energy bills

- Ultimate outcomes. USCB achieves energy sustainability for campus operations.

Progress toward the ultimate outcome depends enabling conditions throughout the process, including budget and staffing resources, communication structure, evaluation and feedback, related programs that support or complement the process, etc.

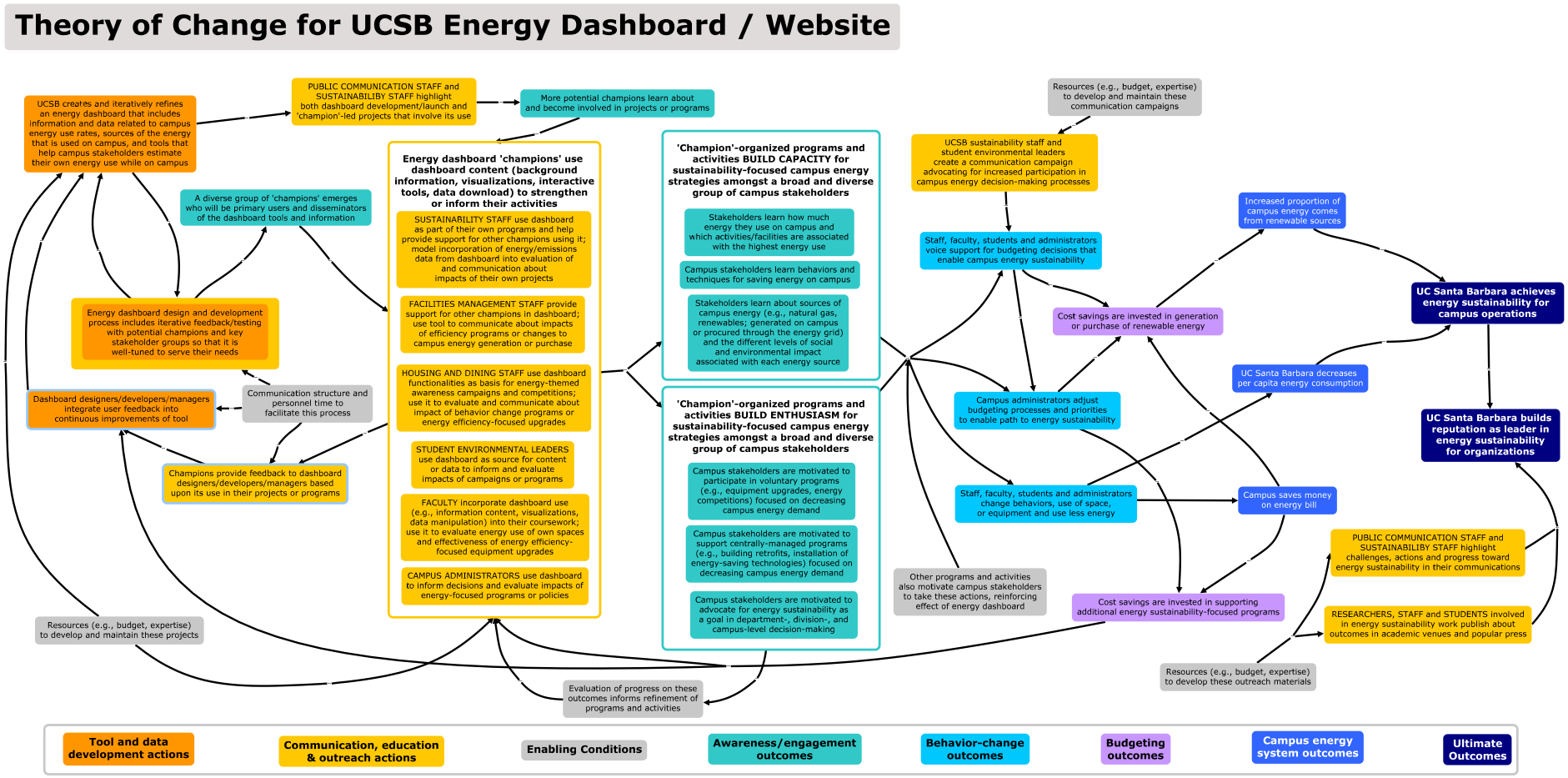


Figure 88. Theory of change for UCSB energy dashboard/website.

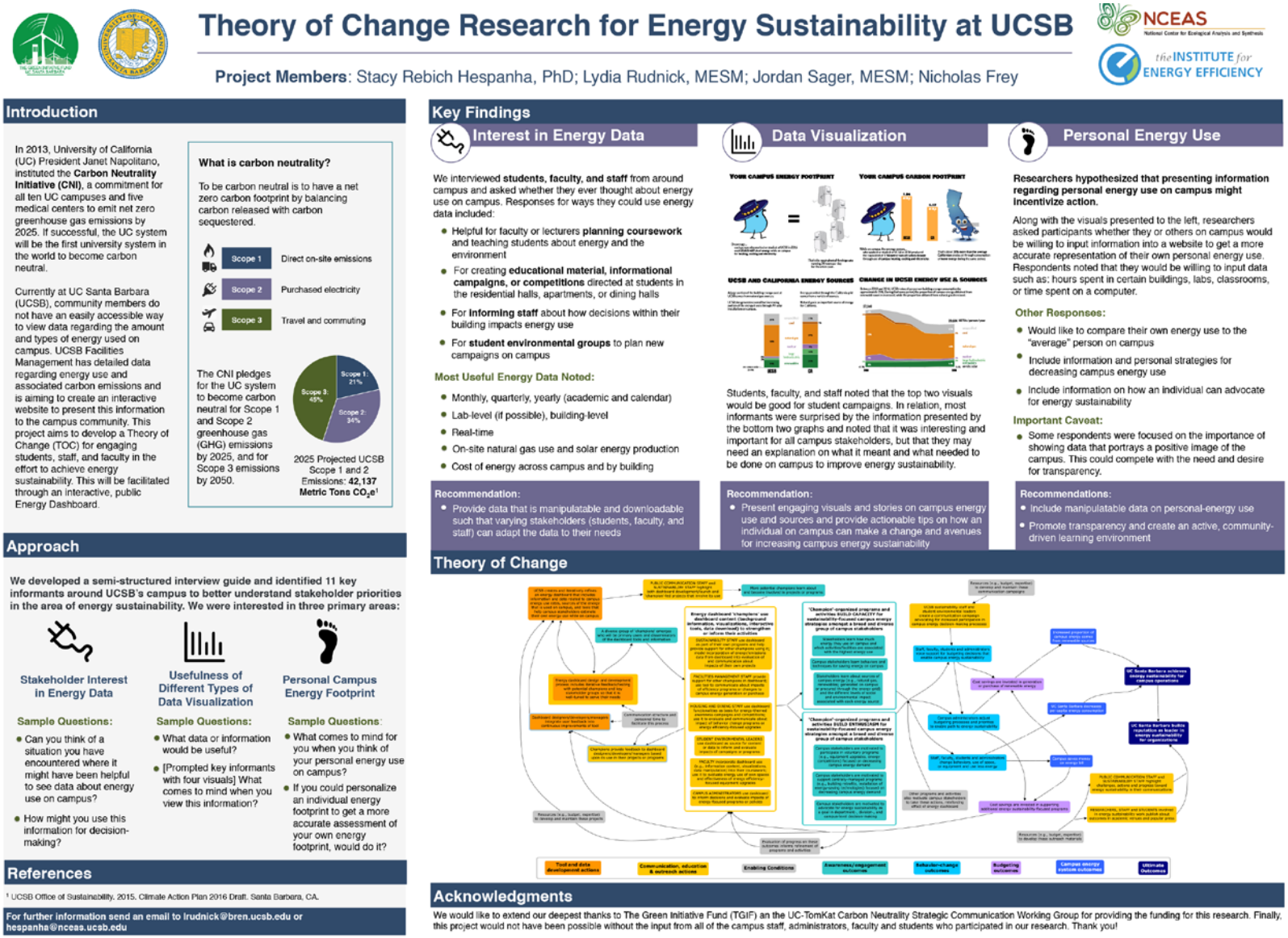


Figure 89. Theory of change for UCSB research, poster with infographic

6.3. Communication and Engagement Toolkit Prototypes

6.3.1. 'Living Lab' Campaign Materials

This appendix includes three related sets of materials. First are themes and headlines about the initiative developed for testing. next are branding concepts for the collaboratory strategy presented in Section 5 of the report. Finally, we include the communication recommendations from Citizen Group that provided the basis for developing these materials.

Consideration was given to broadly defining the contours of a public-facing strategic communications campaign approach to engage campus audiences. The approach outlined is predicated on the belief that a cultural shift is required system-wide, on each of the ten campuses, if the UC is to achieve its 2025 CNI goals. Inspiring A Climate of Innovation and Action on UC Campuses

- Define distinct audience segments within each campus community, largely based on psychographics, in order to communicate and make the goal of carbon neutrality relevant to people's lives based on their existing academic interests, motivations, passions, and political tribes (e.g. scientific discovery; financial; ecological; ideological; etc.)
- Mount a campus-wide awareness program that elevates the big CNI challenges in an inspiring and provocative way; and inspires engagement in the solutions, based on a unified call to action.
- Inspire a climate of action and innovation by supporting and incentivizing engagement among all UC stakeholders, and creating the sense of a 'big tent' where everyone has a meaningful role to play by taking part in solutions large and small, including both institutional and individual actions.
- Encourage (and potentially incentivize) campus groups to develop scalable solutions around the 'living lab' or 'collaboratory' construct through a system-wide Challenge and open call for ideas. Facilitate coordination among intercampus departments and groups to mount a series of collaborative challenges based on themed activities and an annual calendar.
- Emphasize identifying and supporting solutions scalable beyond our campuses (thus positioning the UCs as 'living labs' for carbon neutrality innovation and action). Showcase and promote the many remarkable UC achievements to date or efforts currently underway.
- Document activities and progress to share across a broad range of communications channels, including academic publications, editorial coverage, social media, partner media, video distribution, etc.;
- Create and distribute a Challenge toolkit to drive further engagement and sustain activities; Consider creation of an app or mobile responsive site with associated competition as an engagement tool to regularize behavior and consciousness around campus-wide footprints related to energy, waste, water, food, etc.

The following are four potential themes and headlines for testing with audiences before launching an information and engagement campaign.

Theme 1.

Figure 90. 'Living Lab' campaign materials, Theme 1

Figure 91. 'Living Lab' campaign materials, Theme 2

Figure 92. 'Living Lab' Campaign Materials, Theme 3

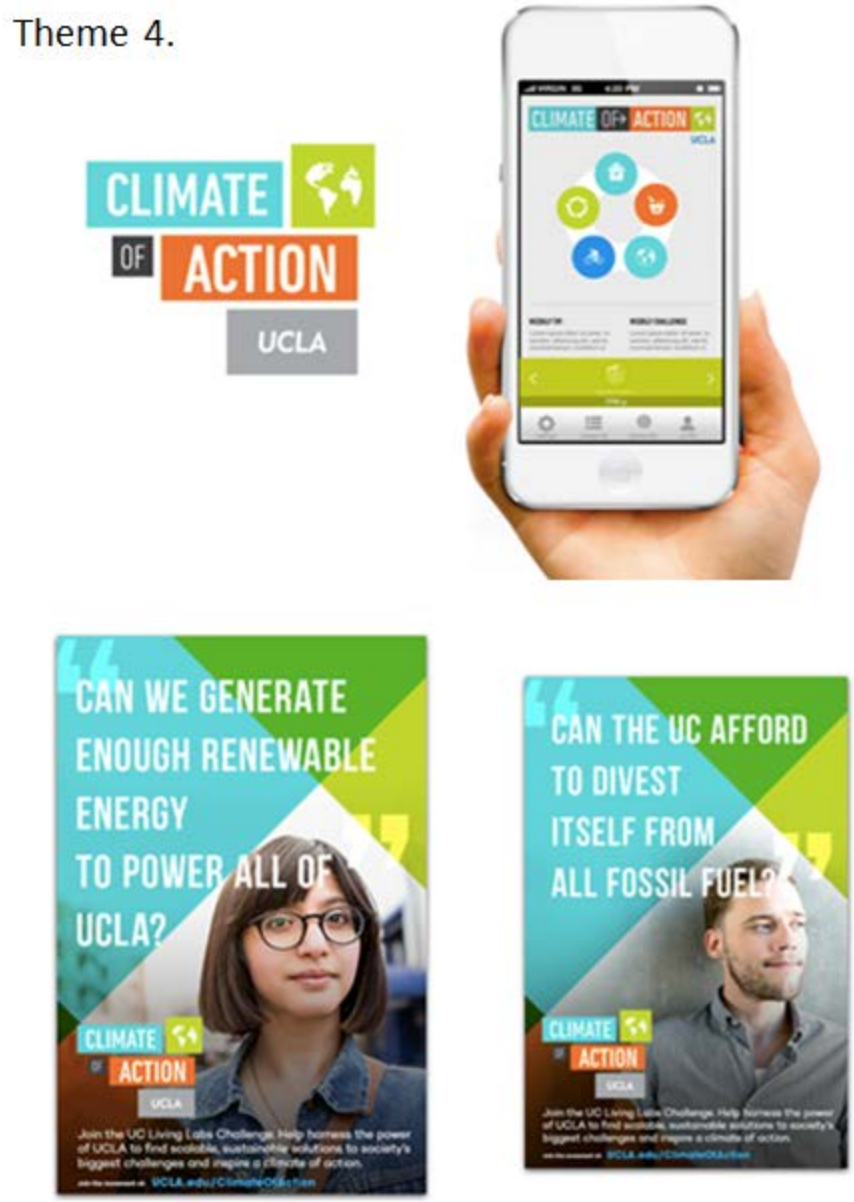


Figure 93. 'Living Lab' Campaign Materials, Theme 4

Collaboratory Branding Concepts

The workgroup also evaluated several branding and design concepts developed to support the collaboratory strategy described in Section 5.

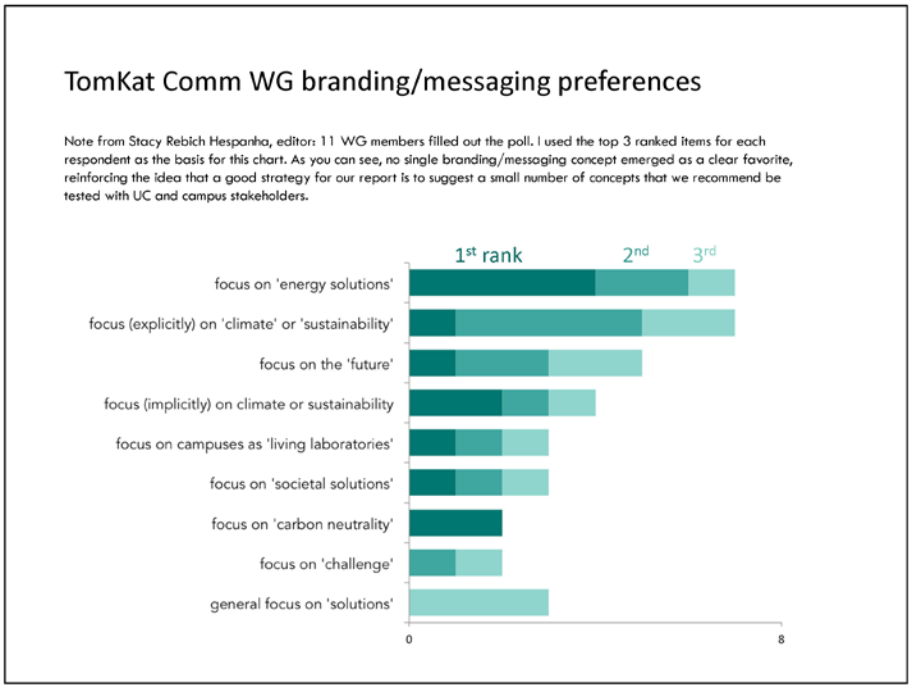


Figure 94. Collaboratory branding concepts: Messaging preferences

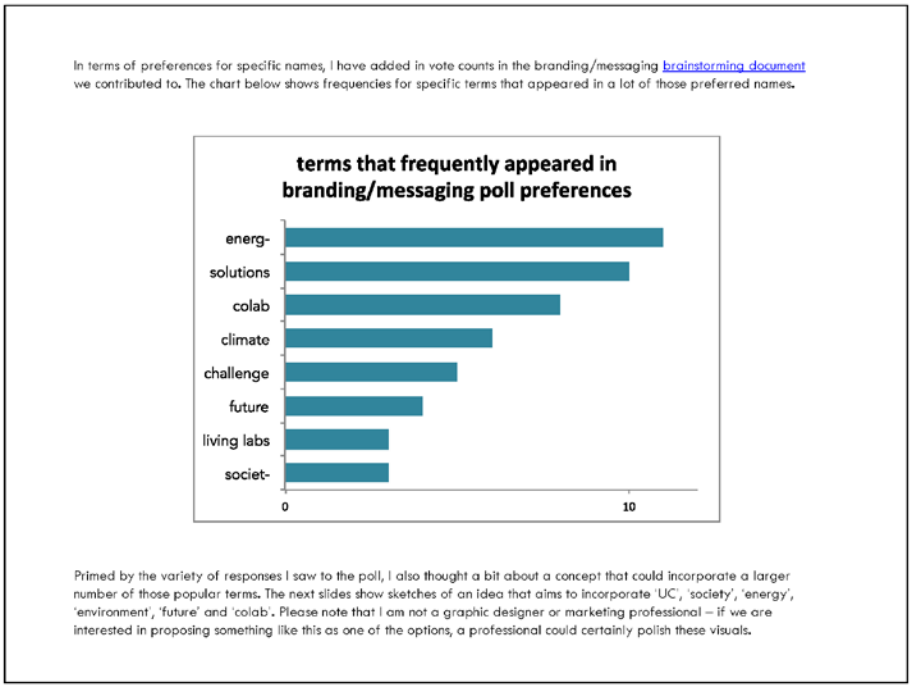


Figure 95. Collaboratory branding concepts: Frequencies of specific terms

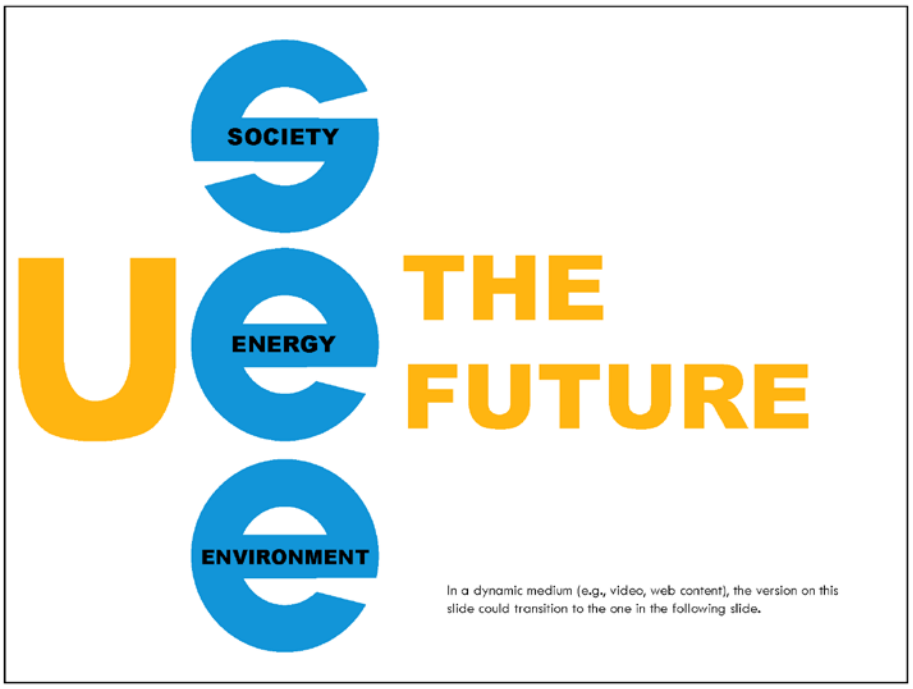


Figure 96. Collaboratory branding concept 1

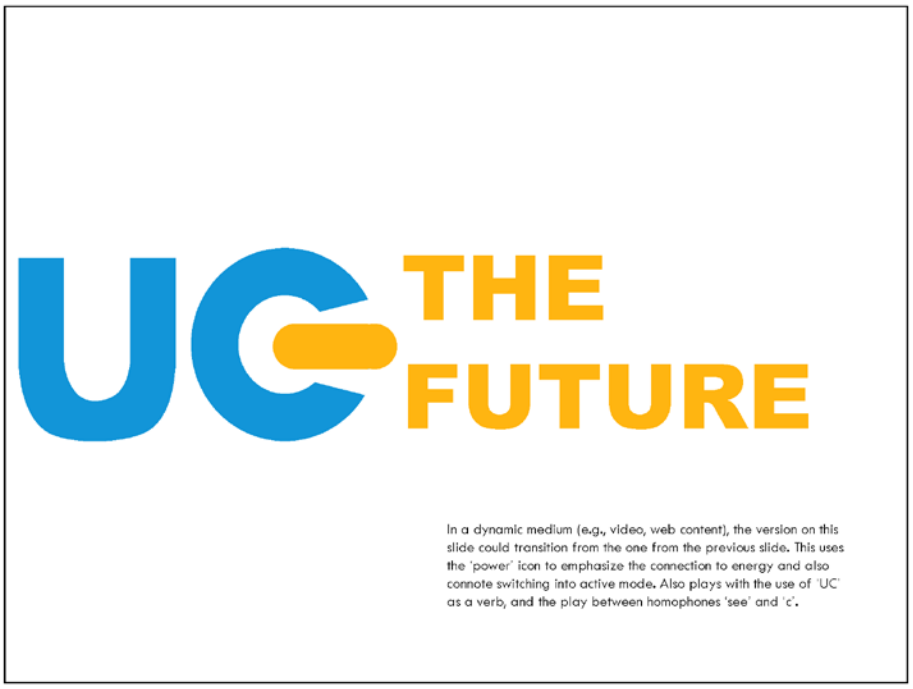


Figure 97. Collaboratory branding concept 2

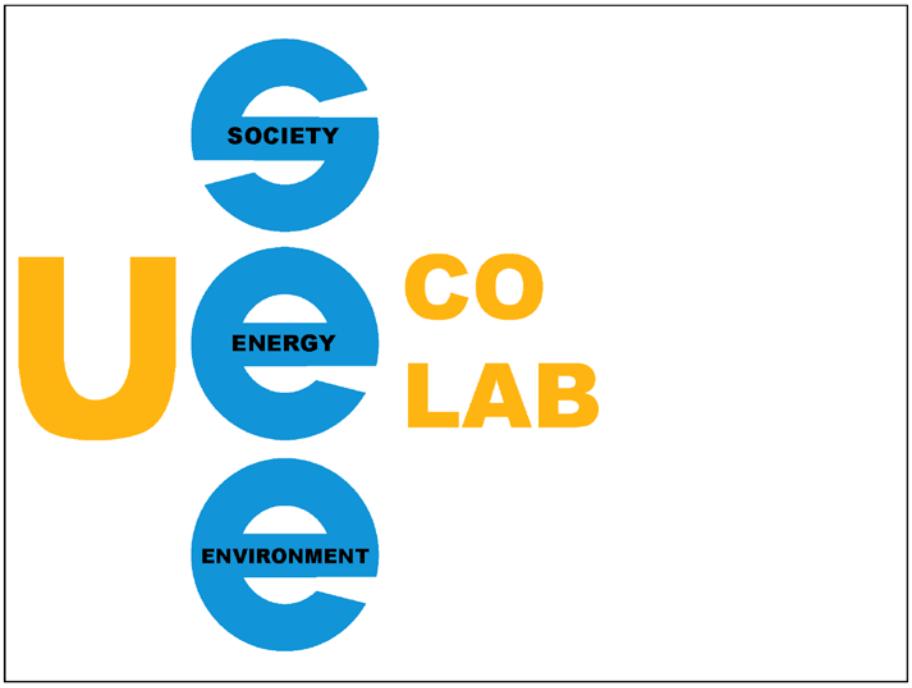


Figure 98. Collaboratory branding concept 3

Figure 99. Collaboratory branding concept 4

Figure 100. Collaboratory branding concept 5

Figure 101. Collaboratory branding concept 6

Citizen Group Report

The following are the conclusions and recommendations developed by working-group member Robin Raj and other working-group members. Mr. Raj, an external member of the work group, is founder and creative director of Citizen Group, a marketing, design and brand management agency specializing in values-based communication strategies.

6.3.2. CNI Fact Sheet

This fact sheet is intended to provide the basic information that a member of the UC community needs to know in order to have an "informed opinion" about UC Carbon Neutrality Initiative.

What is the UC Carbon Neutrality Initiative and what are its goals?

- Over the years, UC campuses have engaged in action to address climate change by reducing or eliminating sources of campus carbon emissions. Long-term efforts to increase energy efficiency and to generate or procure renewable energy have enabled UC campuses to achieve many carbon emissions reduction goals. In an effort to build upon these successes and demonstrate leadership in addressing climate change, the UC Carbon Neutrality Initiative was launched by the UC Office of the President in 2013 and seeks to achieve a goal of zero net carbon emissions for all UC campuses.
    - The CNI goal for **2025** is zero net emissions for building energy and the campus vehicle fleets.
    - The CNI goal for **2050** is zero net emissions for building energy, campus vehicle fleets, and transportation (campus commute and business air travel)
- To achieve carbon neutrality, campuses can:
    - **Eliminate** all or a portion of their carbon emissions, through energy efficiency measures and conservation, sustainable building design, on-site renewable energy production, and renewable energy procurement; and
    - **Compensate** for emissions that are not eliminated through purchase of Renewable Energy Certificates, purchase and resale of bio-gas*, development of UC-managed carbon offsetting programs, or purchase of carbon offsets.

- Because of growth plans to accommodate California's student population, the use of natural-gas-powered central heat and power plants, budget limitations, and other constraints, the university acknowledges that it is not feasible to directly eliminate 100% of carbon emissions from its operations by 2025[15].Therefore, achieving the goal will require investments offsets and other market-based commodities that compensate for the remaining carbon emitted by UC.

What do carbon emissions have to do with global climate change?

- Global climate change is happening due to the growing levels of carbon dioxide and other greenhouse gases in the atmosphere.
- Global climate change, on the scale it is being observed and predicted, will impact the wellbeing of people and ecosystems.
- Research shows that climate change could lead to increased coastal flooding and erosion, losses to the Sierra snowpack and water supply, higher risk of forest fires, damage to agriculture, loss of species habitats and ecosystems, and increased risk of heat- and smog-related public health events, such as higher risks of asthma and heatstroke in vulnerable populations like children and the elderly.†
- Certain human activities, in particular the use of fossil fuels like oil and natural gas, are primarily responsible for the dramatic increases in carbon dioxide and other greenhouse gases in the atmosphere.
- Consequences of global climate change can be less severe if we slow production of greenhouse gases or remove greenhouse gases from the atmosphere.

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* Bio-gas, or bio-methane, is a combination of gases (mostly methane and carbon dioxide) that are produced through decomposition of organic waste. Bio-gas can be captured (e.g., from landfills) and burned as a substitute for natural gas. Bio-gas is considered a renewable energy source.

† https://oag.ca.gov/environment/impact

How much carbon does the UC system emit, and what are the major sources of these emissions?

- Key sources of carbon emissions from UC campuses include:
  - campus operations (purchase of electricity and onsite burning of fossil fuels for heating and cooling, electricity generation, the campus vehicle fleet, waste management, water management)
  - transportation (commute to campus by members of the UC community, business air travel), and
  - purchased goods (energy required to produce and transport equipment, supplies and consumable items used on campus)
  - investment portfolio (approximately $100 billion in investments including retirement, endowment, working capital, and cash assets).
- Not all sources of emissions are tracked due to technical, accounting, and organizational constraints. However, some UC campus emissions are regularly tracked and/or estimated.
  - System-wide emissions from campus operations (building electricity, heating, cooling, and the campus vehicle fleet) were determined to be 1.15 million metric tons of carbon dioxide and other greenhouse gases in 2016. That is approximately 2.8 metric tons of carbon emissions for each of the UC's 417,000 students, faculty and staff members.
    - To put these numbers into perspective, the home energy-related emissions for the average Californian were approximately 1.9 tons per person during the same time period.*
  - Emissions associated with the UC's investment portfolio were estimated to be 6.5 million metric tons of carbon dioxide and other greenhouse gases in 2016.† That is approximately 15.6 metric tons of carbon emissions for each of the UC's 417,000 students, faculty and staff members.
  - Carbon emissions associated with transportation, waste and water management, and purchased goods and services are not yet systematically tracked across all UC campuses, so accurate estimates are not available at this time.

Which actions could UC campuses take reduce carbon emissions from electricity use and building heating and cooling?

To reduce carbon emissions to net zero, UC campuses will need to pursue multiple of the following strategies. It is not possible to achieve carbon neutrality through any single strategy.

- Reduce campus demand for energy by
  - Increasing the energy efficiency of campus infrastructure by installing only highly efficient systems in new buildings and upgrading existing buildings
  - Implementing best practices for centralized energy management (e.g., settings for heating and cooling systems)
  - Decreasing the amount of physical space (e.g., office and lab space), used by members of the campus community (e.g., through increasing use of shared spaces and equipment)
  - Changing energy use behaviors of the campus community
- Generate or acquire low-carbon energy for use on campus by
  - Developing on-campus renewable energy (e.g., solar, wind, bio-gas‡)
  - Developing off-campus renewable energy to supply campuses with energy
  - Supporting projects that increase the proportion of renewable energy available through the grids that supply the UC campuses
- Support projects that generate renewable energy for use elsewhere by
  - Purchasing Renewable Energy Certificates (i.e., paying companies for the right to claim environmental benefits of renewable energy they add to a utility grid)

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* Estimate obtained using values from UC Berkeley's Cool Climate Calculator.
† Estimate based on information from UC Investment Office report for 2016.
‡ Bio-gas, or bio-methane, is a combination of gases (mostly methane and carbon dioxide) that are produced through decomposition of organic waste. Bio-gas can be captured (e.g., from landfills) and burned as a substitute for natural gas. Bio-gas is considered a renewable energy source.

    - Purchasing biomethane ("biogas") from companies who capture methane generated from organic waste decomposition, and reselling it as a replacement for natural gas. Because energy generated from biomethane is considered carbon-neutral, and UC retains the right to claim this environmental benefit when it resells this biogas at the conventional natural gas price.
- Support projects that absorb or prevent emissions of carbon dioxide or other greenhouse gases elsewhere by
    - Developing UC-managed programs that involve actions and activities that result in greenhouse gas emission reductions elsewhere
    - Purchasing carbon offsets (i.e., the right to claim reductions in CO2 or other greenhouse gas emissions that take place in another location) to compensate for campus emissions

What are the technical constraints that must be considered when developing UC campus energy systems?

- Very reliable sources of energy are critical to many of the research and patient care activities that take place on campuses. Many sources of renewable energy are intermittently available; therefore, on their own, they do not provide the level of reliability needed for critical campus functions.
- Many UC campuses depend upon local utility providers for much of their electricity, and have very limited ability to influence how much of the energy they procure from the grid is from renewable sources.
- Some UC campuses generate much of their heat/cooling and electricity through on-campus combustion of natural gas, and have made large investments in "cogeneration" facilities that burn natural gas to produce both heat and electricity to fulfill campus energy needs.
- On-campus renewables (e.g., solar), even if developed to maximum capacity, have potential to satisfy only a small fraction of campus energy needs.
- Transitioning campus energy sources from natural gas to renewable energy will require "electrification" of key campus infrastructure, such as heating and cooling systems that now rely on fossil fuel combustion.

What are the financial constraints on the types of emissions reduction strategies UC campuses can pursue?

- Fuel costs and investments in existing infrastructure
    - Natural gas is currently inexpensive[*]* and many campuses have made large investments in natural gas infrastructure, which poses economic challenges for strategies that seek to replace natural gas use with renewable energy sources.
    - Many campuses have already made large capital investments in on-campus cogeneration facilities that burn natural gas to produce both heat and electricity. These plants generally need to be utilized for several decades in order to pay back the investments made in them.
- Investments in energy efficiency (e.g., through upgrades of existing buildings or high efficiency standards for new construction) typically result in energy cost savings that are greater than the investment costs.
- Although energy efficiency projects typically result in net cost savings over time, they require large up-front capital investments.

What sources of funding are available for the UC Carbon Neutrality Initiative?

- There is no central source of funding for the Carbon Neutrality Initiative as a whole. The university's budget model (introduced in 2012) is designed so that campuses retain their revenues from tuition, state and federal support, research grants, etc. and pay a small portion (1%) of their revenue to support the core activities of the Office of the President (UCOP). Therefore, UCOP has a limited ability to provide the funding necessary for campuses to achieve carbon neutrality.
- Cost savings from investments in energy efficiency could be used as a source of funding for additional carbon neutrality-focused projects.

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[*] Current prices do not typically include environmental and social benefits or costs. While natural gas prices may be low today, the price of natural gas does not include the cost of what burning it does to the atmosphere or human health.

- UC campuses are on limited budgets, and there are few opportunities for raising additional revenue or capital to fund changes to campus energy infrastructure. Any such changes will need to be made largely within the constraints of existing sources of campus funding.
- Public-private partnerships can be used to provide up-front costs for some projects. Savings in operating costs are then used to cover the costs of the provate-sector investment.

What programs or projects already exist to help UC achieve its carbon neutrality goal?

- The Statewide Energy Partnership (SEP), formed by the UC system, the California State University system, and California's four investor-owned utilities, provides financing for energy efficiency projects based on projected first-year energy savings. This program funds equipment retrofits, software systems for monitoring building performance and efficiency, and staff training.[16]
- The UC Wholesale Power Program provides campuses that have approval from the California Public Utilities Commission to purchase energy directly from UC, which serves as a registered Electric Service Provider. To offer this wholesale electricity purchase opportunity to campuses, UC Regents signed 25-year Power Purchase Agreements (PPAs) with Five Points Solar Park, LLC (60 megawatts) and Giffen Solar Park, LLC (20 megawatts), both located in Fresno County, California. These solar facilities were developed and are operated by Frontier Renewables/Clenera, and are owned by Centaurus Capital LP and Global Atlantic Financial Group Ltd.[17–21]
- The UC Biomethane Program involves investment in development of a landfill gas refinement facility in Shreveport, LA and purchase of biomethane from food processing waste near Green Bay, WI. This program will make use of a 'displacement' strategy that involves injecting biomethane into a natural gas pipeline at one location and removing an equivalent quantity of natural gas from a pipeline in another location, counting that natural gas consumption as biomethane consumption. Campuses will be able to purchase biomethane credits through this program to compensate for their natural gas consumption. The landfill gas refinement facility in Louisiana will be developed by SCS Engineers and owned by the University of California, and will be built at the site of an existing landfill gas collection and control system owned by Renovar Energy Corporation under contract with the city of Shreveport. UC will acquire biomethane for refinement and resale through a 20-year contract with Renovar. Biomethane from the Wisconsin facility will be purchased through contract with EEC Denmark[17,22–24].

What can members of the UC campus communities do to help their universities achieve the carbon neutrality goal?

- The 2025 carbon neutrality goal focuses on emissions from campus buildings and vehicle fleet. Behaviors that members of the UC community can adopt to help achieve that goal are limited to those that impact building and campus vehicle emissions. They include:
    - Behaviors that reduce demand for building energy, such as
        - Using more shared spaces and equipment, rather than individually controlled spaces
        - Reducing size of individually controlled spaces (e.g., offices, labs) that need to be heated, cooled, and lighted.
        - Replacing energy inefficient equipment or appliances with more energy efficient versions
        - Reducing the amount of time when building energy is used to power systems (e.g., lighting, lab/computing/food service equipment, appliances) that are not needed or in use at the time.
    - Behaviors that contribute to transition from fossil fuel energy sources to renewable energy sources, such as
        - Communicating with campus leadership and colleagues about the importance of transitioning campus operations to renewable energy
        - Communicating with campus leadership and colleagues about preferred strategies for compensating for, or offsetting, unavoidable carbon emissions

    - UC students, faculty and staff can bring new ideas to the table through applied research and analysis, particularly when working together on focused problems.

- The 2050 carbon neutrality goal also includes emissions from the campus commute and air travel. Behaviors that impact travel and commuting emissions include:
    - Using a form of alternative transportation (e.g., bicycling, walking, carpooling, public transport) for commuting to and from campus.
    - Telecommuting rather than traveling to campus for work.
    - Using ground transportation (automobile, train, bus, electric vehicle/carpool) rather than flying when traveling for business purposes such as meetings and conferences.
    - Reducing the number of business trips needed. Strategies could include:
        - Before making plans to travel, do mental accounting of whether the benefits of the trip outweigh the environmental costs.
        - Group needed travel into multi-destination trips to avoid needing both outbound and return travel for every destination.
        - For maintaining communication and relationships for longer-term activities, schedule less frequent in-person meetings of longer duration.
        - Use virtual communication to replace or reduce need for travel to meetings.

6.3.3. CNI Glossary

Explanation of terms used in this report in reference to the UC Carbon Neutrality Initiative.

Biogas. Biogas is methane that is not from fossil fuels, which can substitute for natural gas. Three UC campuses have on-site projects that use biogas collected from a landfill or anaerobic digester, with additional projects in planning.

CARB-compliant offset. Carbon offsets that comply with protocols developed by the California Air Resources Board (CARB), under projects registered with CARB. Available protocols include forest, livestock, ozone-depleting substances, mine methane capture, and rice-cultivation projects.

Carbon footprint. The total greenhouse-gas emissions caused by an organization expressed as the equivalent amount of carbon dioxide emitted (based on climate-warming potential).

Carbon neutral. Having a net-zero carbon footprint, by balancing the amount of carbon released with an equivalent amount sequestered, avoided or offset carbon.

Carbon offset. A reduction in emissions of greenhouse gases, not otherwise required by law and made through investment in an off-site project, in order to compensate for an emission within an organization. A carbon offset is a short- or long-term financial instrument, or investment in reducing emissions that would otherwise continue.

Cogeneration. See *Combined heat and power plant*.

Combined heat and power plant. Combined heat and power plants (CHPs) burn natural gas to generate electricity and provide heating (and cooling at some sites) for campus buildings. They are also referred to as “co-generation” or “central heating and cooling” plants. As of 2017, seven UC campuses operate CHPs, and on-campus combustion of natural gas in CHPs accounts for 65 percent of UC’s greenhouse gas emissions.

Energy efficiency. Energy efficiency means reducing the amount of energy required to operate buildings and equipment. Deep energy efficiency refers to very high energy use reductions that result from aggressive building system retrofits. Energy efficiency has been a high priority cost- and carbon-reduction strategy for UC since at least 2004. UC continues to reduce its on-site energy use, and three types of deep-energy-efficiency projects are presently under evaluation and development: deep lighting, deep heating, ventilation and air conditioning, and smart labs.

Energy Service Unit (ESU) renewable projects. This is a multi-campus UC operating unit that enables UC to buy and sell wholesale energy. Its first large project was an 80-megawatt solar-energy facility near Fresno, CA, that came online in 2016 and supplies renewable electricity to the grid.

Non-regulated offsets. These types of offset investments are part of a market not regulated by government protocols, and may be less expensive than regulated offsets. UC would still need to verify these offsets in order to justify the investment.

On-campus solar (also called on-site solar). ON-campus solar installations are ground or roof-top installations of solar panels. UC currently has 36 megawatts of on-site solar electricity, and campuses are planning additional solar-photovoltaic and solar-thermal projects.

Scope 1, 2 and 3 emissions. Scope 1 emissions are direct greenhouse-gas emissions produced by campus operations from combustion of natural gas, the operation of campus fleets, and other sources, (Scope 2 emissions derive from purchased electricity and steam.).Scope 3 emissions are indirect emissions associated with faculty, staff and student commuting, research travel, purchased goods and other

activities. UC's Carbon Neutrality Initiative addresses Scope 1 and 2 emissions. Scope 3 emissions are also being addressed, but through other campus programs.

Short-term Renewable Energy Certificates (RECs). RECs are tradable, non-tangible energy commodities that represent proof that 1 megawatt-hour of electricity was generated from an eligible renewable energy resource.

Statewide Energy Partnership (SEP). In 2009, UC introduced its Statewide Energy Partnership Program, which augmented UC's participation in the UC/CSU/Utility Energy Efficiency Partnership (See below.) with bond-based loan financing to cover much of the balance of project costs. This program made $178 million in loan financing available to campuses in its first three years, with additional amounts subsequently authorized. It was formed by the UC system, the California State University system, and California's four investor-owned utilities (IOUs). (See also *UC/CSU/Utility Energy Efficiency Partnership*.)

UC/CSU/Utility Energy Efficiency Partnership. This partnership provides incentives for energy efficiency retrofits. During the pilot phase, 2004-2005, incentives covered 100% of project costs. In 2006, the program shifted to partial incentives, with some project caps and more overall incentive funding available. This program enabled many of the efficiency gains achieved by the University of California since 2004. (See also *Statewide Energy Partnership*.)

UC-developed offsets. These are investments by UC in new offset projects. In some cases they make take advantage of local and regional offset opportunities that offer tangible environmental, social and economic benefits to a local community.

6.3.4. Energy and Funding Strategy Workshop Materials

Energy Strategies Breakout Session: Emissions Reductions Perspective

1. Please read the following prompt and complete the exercise on your own
2. Compare your responses with other participants who completed same activity; try to arrive at consensus and complete an additional worksheet for group consensus
3. Write values arrived at by your group up on the board

The UC system can pursue a variety of energy strategies in order to achieve its carbon neutrality goals. From your perspective, what portion of the needed emissions reductions should be achieved through each of the following strategies? (Be sure to check that your total adds up to 100%.)

UC Emissions Reductions Strategy	*Ideal* Percentage (%)		*Practical* Percentage (%)	
Energy Efficiency - Invest in energy efficiency to reduce energy consumption				
Behavior Change - Incentivize behavior changes to reduce energy consumption				
On-Campus Renewable Energy - Generate renewable energy on campuses		Or **Total for all 3 RE strategies**		Or **Total for all 3 RE strategies**
UC Renewable Energy - Purchase energy from UC-managed renewable projects that feed the campus grids				
Utility Renewable Energy - Purchase renewable energy from utility companies				
UC Biogas Program – Invest in developing infrastructure to capture and sell biomethane elsewhere to compensate for natural gas burned on UC campuses				
Renewable Energy Certificates (RECs) – Purchase the right to claim environmental benefits of renewable energy added to the grid elsewhere				
Carbon Offsets - Purchase carbon offsets				
Other - please specify				

What is the reasoning behind your strategy choices? (use back of page, if needed)

What additional information could you use to help you refine your strategy choices? (use back of page, if needed)

Energy Strategies Breakout Session: Funding Allocation Perspective

Please read the following prompt and complete the exercise on your own

Compare your responses with other participants who completed same activity; try to arrive at consensus and complete an additional worksheet for group consensus

Write values arrived at by your group up on the board

Imagine that the UC campuses receive a sum of money to advance their carbon neutrality goals. For each dollar received, what portion should be allocated to pursuing each energy strategy? (Be sure to check that your total adds up to 100%.)

UC Energy Strategies Funding Allocation	Percentage (%)	
Energy Efficiency - Invest in energy efficiency to reduce energy consumption		
Behavior Change - Invest in incentivizing behavior changes to reduce energy consumption		Or **Total for all 3 RE strategies**
On-Campus Renewable Energy - Invest in infrastructure to generate renewable energy on campuses		
UC Renewable Energy - Purchase energy from UC-managed renewable projects		
Utility Renewable Energy - Purchase renewable energy from utility companies		
Carbon Offsets - Purchase carbon offsets		
Other - please specify		

What is the reasoning behind your allocation choices? (use back of page, if needed)

What additional information could you use to help you refine your allocation decisions? (use back of page, if needed)

Funding Strategies Breakout Session

As you did in the last breakout session, first read the prompt and complete exercise individually, next compare responses and try to arrive at consensus (complete additional worksheet), then write consensus values on the board.

The UC system can pursue a variety of funding strategies in order to achieve its carbon neutrality goals. From your perspective, what portion of the needed funding should be acquired through each of the following strategies? (Total should equal 100%.)

Potential UC-CNI Funding Strategies	Ideal Percentage (%)	Practical Percentage (%)
Revolving fund - Allocate energy cost savings from completed energy efficiency projects to further investment in carbon neutrality actions		
Energy use-based fee - Assess a variable fee on campus energy use so that the largest energy users pay the largest fees		
Space-based fee - Assess a variable fee on campus space use (e.g., offices, labs, dorms) so that the largest space occupiers pay the largest fees		
Flat fee - Assess a flat fee on all campus employees and students so that each contributes equally to funding campus carbon neutrality actions (regardless of energy consumption)		
Grant surcharge - Assess a variable surcharge on grants received by the university so that larger grants contribute more to funding campus carbon neutrality actions		
Voluntary offsets - Raise funds through a voluntary carbon offsetting program that campus employees and students can pay into to offset their own energy consumption (e.g., home/office/lab energy use, commuting, air travel).		
Additional state funding - Access new sources of funding through additional support from state government		
Partnerships - Access new sources of funding through collaborations with business or non-profit partners		
Philanthropic gifts - Access new sources of funding through philanthropic gifts		
Other - please specify		

What is the reasoning behind your strategy choices?
What additional information could you use to help you refine your strategy choices?

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