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Impacts of Student-Led Sustainability Efforts at Fresno State

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Abstract

As California State University, Fresno (Fresno State) continues to develop institutional capacity to improve sustainability within the contexts of the Association for the Advancement of Sustainability in Higher Education (AASHE), the university mission, and strategic objectives identified by the California State University (CSU), student activism has played a critical role in establishing the groundwork for current efforts. Despite progress towards an overarching goal of integrating sustainability into all parts of the institution, near constant turnover within the institution and student-led organizations often leaves uncertainties about institutionalization, with questions often arising about the respective roles of faculty, staff, and students. It is also often unclear whether the sustainability efforts contributed by students act to empower them or if it serves as an additional burden. In our research, we compare a case-study of our student-led efforts towards the integration of sustainability at Fresno State to a landscape analysis of integrative sustainability efforts findable across websites of all other CSUs. The aim of this paper is to examine the current roles that students are playing in both campus and system-wide sustainability efforts. Case study and landscape analysis results suggest that while students look to their campuses to provide sustainability leadership, youth-led efforts are apparently the most numerous in advancing efforts across the CSU system. This supports more contemporary views of students and the need for asset-mindedness, as well as the idea that educational institutions—who are charged with leading sustainability (i.e., AASHE)—can increase equity and reduce student burdens by recognizing, supporting, and intentionally collaborating with leading student efforts.

Introduction

“It’s one thing to encourage youth to participate, to come to events like this, but it’s an entirely different thing to provide a space where youth feel empowered to drive change. We need to start recognizing young people for the value that they are.” -Ernest Gibson, COP26

“Our generation wanted to not only change the world but to save it.” -Greta Thunberg

Efforts to achieve institutional sustainability at Fresno State can be characterized as a *bottom-up* approach made by successions of student leaders and activists who have played a critical role in establishing the framework for change. These

efforts share much in common with other youth-led organizations such as Fridays for Future, Sunrise Movement, and Future Coalition, as well as student-led activism that has been facilitated on other CSU campuses (e.g. the Stanislaus Eco Warriors or Channel Island's Green Generation Club). The Chancellor's Office provides important guidance, encouraging campuses to "integrate" sustainability within everyday academic, student, and facility-based operations (CSU Sustainability Policy, 2014). Unfortunately, these directives remain ambiguous in specifically mapping how sustainability goals can be achieved within the greater scope of Fresno State policy. The progressive pathway undertaken by student leaders at Fresno State between 2013-2021 led to collaborative decision-making roles with campus administration to find creative ways to apply funding and empower students to re-imagine their roles in building resiliency against the uncertainties and challenges from changes in our air quality, water and climate (Jasechko & Perrone, 2021; see also Hanak et al., 2017; Meixner et al., 2016; Lo & Famiglietti, 2013).

While students at Fresno State are leading campus climate action and sustainable change, the most common advancement of sustainability is often described as a *top-down* (Rowe & Hansen, 2016) academic process (Augustine, 2021; see also Buckley & Michel, 2020; AASHE 2010), where the institution creates a sustainability officer role and/or a sustainability institute (Fu, et al., 2020) responsible for beginning the coordination of sustainability across all sectors of the institution. Subsequently, campuses tend to join consortium networks like the Association for the Advancement of Sustainability in Higher Education (AASHE) and sign the American College & University Presidents' Climate Commitment, which then support sustainability-related development and accounting methods for senior leadership who possess an immediate ability to influence strategic planning and subsequent resource allocations for progressive advancements across several intersectional components of campus: academic affairs, student affairs, facilities, and administration.

Even at its best iteration, this typical top-down growth pattern misses the guiding narrative and lived-experiences from the youth that institutions serve: our students. Solutions and strategic planning without strong involvement from student leadership raises questions about their enfranchisement and the ability of the university to actualize youth power (Stone, 2021; see also Thew et al., 2020). Paradoxically, in the absence of a top-down initiative, institutions can have impactful, student-led movements that push sustainable advancement (Rowe & Hansen, 2016), although this approach can disproportionately burden students (Cheong et

al., 2016; see also Mitra et al., 2014; Mein, 2018; Thew et al., 2020). Here, we share a case study of the history of sustainability on our campus and explain how student leadership served institutional advancement when there was a perception that senior leadership was lacking. By mapping out both historical efforts and our most recent "road show," we also show that student-led sustainability efforts can be as institutionally transformative as more typical top-down approaches, while allowing for more inclusive and empowering roles for our young activists at all levels of the university. Then, we compare our history with a landscape analysis of sustainability across all CSU campus websites, in order to give a better sense of how students are contributing to their local campus efforts. We use the results to then infer the respective role our students are playing in driving much-needed, sustainable campus advancement.

Fresno State's Institutional Setting

Fresno State is a Hispanic Serving Institution (55% Hispanic students) and an Asian American and Native American Pacific Islander-Serving Institution (12%), with the campus consistently ranking as one of the nation's topmost institutions in social mobility and equity (CollegeNET, 2020; see also Fresno State, 2021). Our actual graduation rates greatly exceed expected graduation rates estimated from incoming student metrics including financial support and other demographic information. This gives Fresno State a unique role in promoting social mobility, reducing achievement gaps, and promoting a more equitable and successful future for the diverse community we serve.

As currently written, the mission of the California State University (CSU) is to "advance and extend knowledge, learning, and culture, especially throughout California[...] prepare significant numbers of educated, responsible people to contribute to California's schools, economy, culture, and future[...] promote an understanding and appreciation of the peoples, natural environment, cultures, economies, and diversity of the world" (California State University, n.d.). Here in California's agriculturally rich Central Valley, challenges are presented in our region's high rate of food insecurity (Crutchfield et al., 2016), a disproportionately high number of the state's failing water systems (Reese, 2018), and some of the highest incidences of respiratory issues in the state and nation (Alcala et al., 2018, 2019; see also Schwartz et al., 2009). In line with our mission, Fresno State has to provide new skills, knowledge, and mindsets to prepare 25,000 students each year to meet the local and global challenges presented

by climate change, losses of biodiversity, population growth, limited water resources, health issues, energy inequities, extreme poverty and displacement (Joint Center for Political Economic Studies, 2012; see also UNDESA, 2019).

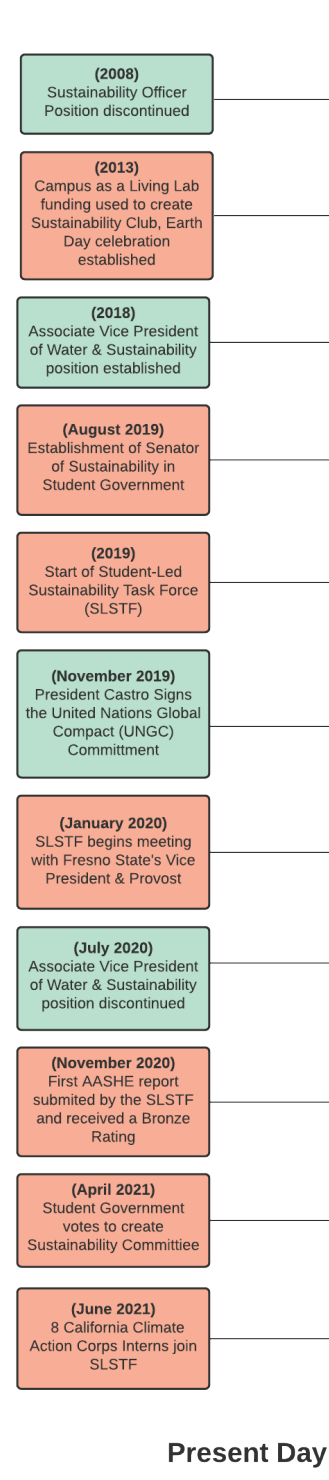
Sustainability Timeline at Fresno State

Following many other institutional trends, Fresno State's sustainability efforts began with a typical administrative-level type of sustainability coordinator position (Figure 1). There was a Sustainability Officer position in 2008, which was discontinued due to budget contractions during the recession. In its absence, three faculty leveraged CSU Chancellor's Office Campus as Living Lab funding to establish Fresno State's Sustainability Club in 2013, reviving an annual Earth Day celebration on campus and slowly growing to tackle much larger campus goals and community events. In 2015, students from the club demanded more high-level campus coordination by advocating for a new Associate Vice President (AVP) for Water & Sustainability position, which was successfully established in 2018 (Fresno State). This position enabled coordination at high levels and was a creative solution by the Provost at the time, who modified an existing water directorship to include sustainability in the position's scope of work. During his brief tenure, the AVP for Water & Sustainability worked closely with the Sustainability Club to connect students and faculty with university administration, and he collaborated with the club on strategic planning for the 2018-2019 school year. These goals included creating a catalog of best practices being implemented successfully at other college campuses, conducting a sustainability literacy test of the Fresno State Student body, and expanding club engagement across all eight colleges.

During this time (2019), the Sustainability Club began reaching more students and created a network between faculty and student organizations, such as the Associated Students, Inc. (ASI) and the Fresno State Chapter of the National Association for the Advancement of Colored People, to further integrate sustainability across the campus. Citing an institutional stagnation of critical sustainable advancement university-wide, student activists quickly turned their attention toward both educating the general student population as well as advocating for university-wide change. Identifying a need for broader student governance involvement, the Sustainability Club collaborated with ASI to create a new senator position. This major advancement was the result of a successful referendum vote to create a Senator of Sustainability position, which passed with 89% of student voters in support (Casey, 2019). With this new position established, Sustainability Club of-

Figure 1

Timeline of Sustainability Events at Fresno State



Note. Visual representation of the history of sustainability at Fresno State. Green highlights administrative-led events whereas orange highlights student-led events. A more detailed timeline can be found on the Fresno State Sustainability Website. Timeline is not to scale.

Institutional Effectiveness for data maintenance and quality assurance. Specific information on the survey, assessment questions, and more detailed information can be found in section EN-6 credit of Fresno State's AASHE STARS report.

CSU-wide Sustainability Landscape Analysis

The Landscape Analysis Survey was conducted June–July 2020 by the SLSTF with guidance from a professor within Fresno State's Media, Communications & Journalism Department. A landscape analysis can be helpful in assessing an organization's efforts, especially for comparison to efforts being done by other similar and/or competing entities (see Garcia et al., 2020 and references therein). The analysis entailed thorough review of each CSU campus website and documentation of content found within the sites for reporting on these nine categories:

1. AASHE STARS Standing
2. Clubs and Events
3. Commitment Statement
4. Intersectionality
5. Graphic or Logo
6. Majors and Minors
7. Presence in Facilities and Operations
8. Presence in Student and Faculty Governance
9. Sustainability Definition

While it is possible for campuses to be included in this analysis who exhibit sustainability in these topics but who lack web accessibility and/or outdated web content, the landscape analysis still allows for a meaningful overview of how the CSU campuses are (or were) publicly communicating their respective sustainability efforts during the 2020 summer timeframe.

Fresno State Sustainability Student Time Survey

In April 2020, the Sustainability Club President, who was also working in the SLSTF, interviewed some of the most active Sustainability Club members and officers to survey what other obligations they held, and the degree of time commitment dedicated to extracurriculars in addition to course workload. Ten students were surveyed regarding daily and weekly hours spent on academic course load, student research, campus involvement, time spent doing work related and unrelated to campus sustainability, and daily personal responsibilities.

Campus Outreach Sustainability “Road Show”

A key aspect of the SLSTF work was, and still is, educating students, faculty, staff, and the community on the

meaning of sustainability and the importance of integrating sustainability across all campus efforts. Following the achievement of the [AASHE STARS](#) bronze rating, the Vice President and Provost encouraged an informational outreach effort by the SLSTF—coined as the *Sustainability Road Show*—which was a methodology developed to move outreach beyond student-to-student class visits and club tabling so as to encourage more cross-campus interactional engagement with faculty, staff, and student government. By sharing efforts with other parts of campus, the SLSTF could expand current understanding of how sustainability applies to all parts of the institution. Target audiences of the Road Show included the Campus Planning Committee, Leadership Roundtable, President's Cabinet, Curricula Committee, GE Committee, Academic Affairs Leadership Team, Alumni Association, and Council of Chairs. All groups except the GE Committee scheduled student-led presentations, with additional follow-up presentations requested by student and faculty governments, Athletics, and Advancement and Communications.

Results

Fresno State Student Sustainability Literacy Survey

The survey conveyed that over 70% of participants had a passion for sustainability or at least a considerable interest. When asked the degree of influence various factors had in shifting student attitudes regarding sustainability, respondents chose from categories such as: media; campus initiatives; college instructors/coursework; community activism (off-campus); campus activism; peers; family; high school instructors/classes. It was found that peers remained most influential in shifting positive attitudes toward sustainability, followed by college instruction then campus activism (Figure 3).

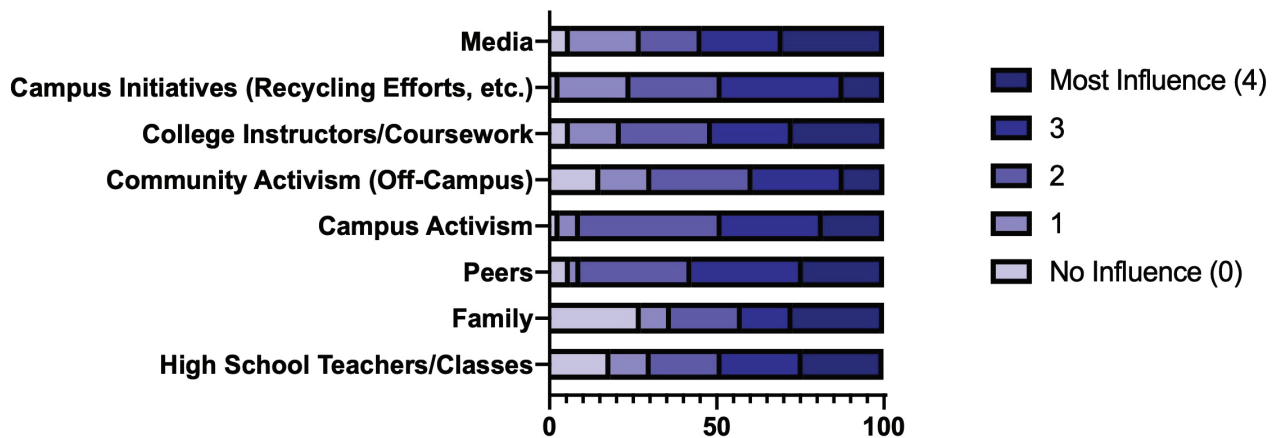
Similarly, when asked about their thoughts on the role of universities, 72.7% of respondents strongly agreed universities should be sustainability role models in their daily operations. However, only 42.4% of respondents agree that Fresno State was doing a good job of modeling sustainability in its daily operations (Figure 4).

CSU-wide Sustainability Landscape Analysis

Nearly all CSU campuses are making significant progress in the integration of sustainability into their daily practice and are all at different stages in this transition. Data and qualitative summaries of the full analysis are available in [Supplemental A](#),

Figure 3

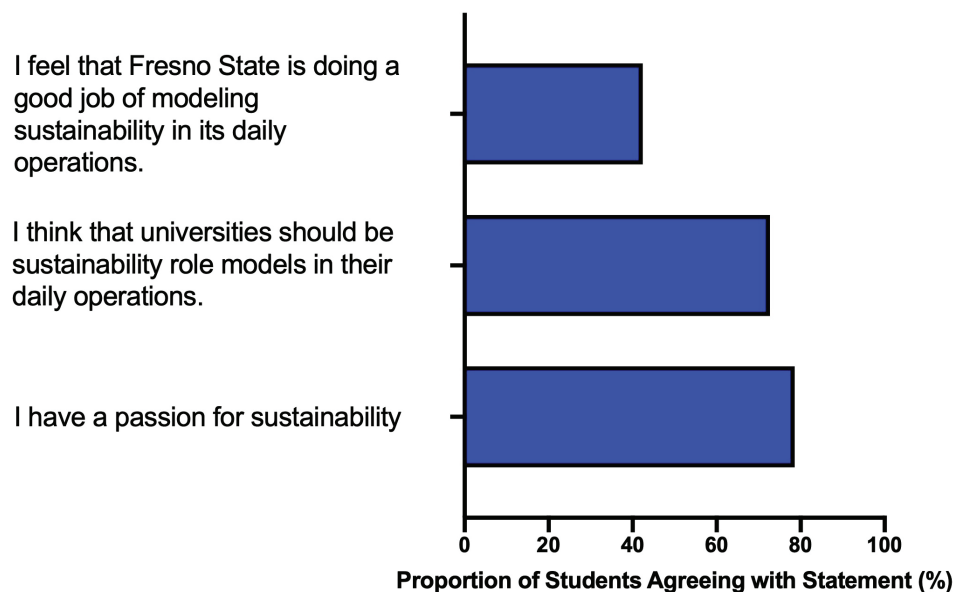
Assessment of Primary Influences of Student Attitudes Toward Sustainability (n=42).



Note. Breakdown of Student Influences on Sustainable Attitudes by Category.

Figure 4

Student Sustainability Literacy Survey (n=42)



Note. Attitudes regarding sustainability amongst the student population at Fresno State.

with the main findings across the nine categories summarized in table 1. Overall, most CSU campuses have some presence of the three-pronged sustainability definition (i.e., people, profit, planet), with 17 of the 23 campuses active and ranking silver or

above in AASHE STARS. Additionally, most campuses (18 out of 23) have student clubs related to sustainability. About half the campuses (13 of 23) have sustainability representation in student governance, with slightly less representation appar-

Table 1. *Main Findings of Website Landscape Analysis across 23 CSU Campuses.*

Content Area:	Main Findings for June-July 2020 Websites:
AASHE STARS Standing	7 gold campuses, 10 silver, 4 bronze, and 2 participating
Clubs and Events	18 campuses have at least one club or internship program related to sustainability, with 14 of those having multiple programs on campus. 13 campuses have Earth Day/Week events. Chico has a notable yearly “This Way to Sustainability Conference.”
Commitment Statement	Few campuses (~2) are externally committed (Second Nature or AAUPC), with a few more (~4) mentioning CSU-wide sustainability policy.
Intersectionality	4 campuses with messaging that includes the idea of sustainability as increasingly being embedded within social justice issues.
Graphic or Logo	7 campuses with a sustainability graphic or logo. Only 1 graphic, Chico’s, actually embeds sustainability within the university’s mission and strategic priorities.
Majors and Minors	8 campuses with “sustainability” related majors and/or minors; 3 campuses with bachelors or masters “sustainability” degree labels. 11 campuses with sustainability-related bachelor degrees, 9 campuses with related minors, 7 campuses with graduate degrees, 3 campuses with GE pathways, and 3 campuses with sustainability-related certificates.
Presence in Facilities and Operations	4 campuses with sustainability in facilities, appearing well integrated to other sustainability efforts on campus. 5 campuses with sustainability in facilities, unconnected to other campus efforts (link)
Presence in Student and Faculty Governance	13 campuses with sustainability committees and/or student senator position; 7 campuses with faculty committees in faculty governance and/or at the university. A few (~2) with campus-wide presidential or cross-governance and operational collaboration.
Sustainability Definition	Three-prong definition is most commonly used, like “people, profits, and planet,” reflecting the common rhetorical device of sustainability experts who use the three-legged stool as a symbol.

ent in analogous faculty structures (about seven). Half of the campuses similarly have sustainability-related majors and/or minors. Less frequently found are commitment statements, graphics, and intersectionality demonstrating the coordinated integration of sustainability across campus entities.

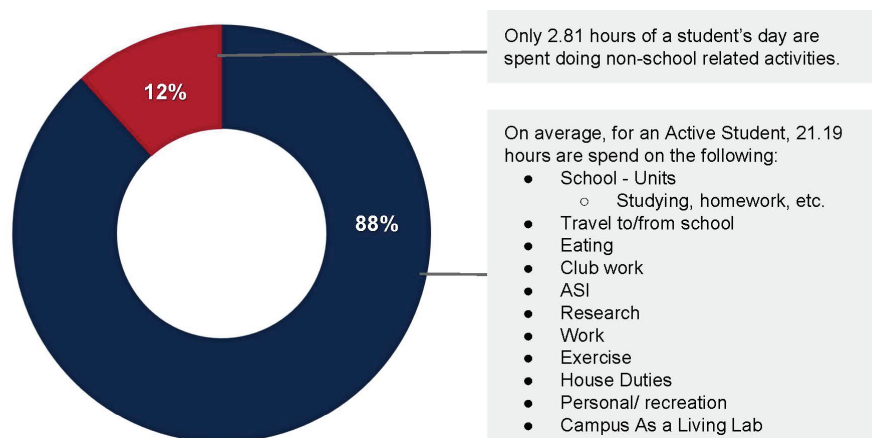
Fresno State Sustainability Student Time Survey

Our survey revealed that students involved in sustainability activism at Fresno State were also exceeding expectations in academic and extra-curricular activities, on top of other familial or household commitments. Students must take a minimum of 12 units as an undergraduate to be considered a full-time student, according to FAFSA. Of the ten students surveyed, nine were taking more than 12 units (average units taken: 16; maximum units taken: 21). Given that each unit represents about three hours of work each week, a student tak-

ing 15 units is easily committing 45 hours to school each week. We found that six of the 10 students surveyed were actively involved in at least two clubs, primarily in leadership capacities. Most students also held paid employment in some capacity, either on or off-campus. Taking into account time for meals, personal care, transportation, and sleep, we found that students were significantly encumbered with responsibilities. After totaling all the hours students were participating in daily activities, we found that students spend on average 21.19 hours a day (n=10) working on their responsibilities and health (Figure 5). These students are not only working a full schedule of classes, study time, extra-curricular activities, and work but also leading Fresno State’s integration of sustainability.

Campus Outreach Sustainability “Road Show”

As of June 2021 the SLSTF presented to over 300 unique

Figure 5*Student Activist Responses Regarding Time Commitments***Table 2.** *Sustainability Roadshow Meeting Accounting Sheet.* *Note.* These meetings were intended to share sustainability efforts across campus, introducing Fresno State's AASHE STARS report, and provide recommendations for improvement.

Date	Measure	Count	New Connection	Notes
9/1/20	People	5	5	Initial Group
9/10/20	People	41	41	CSM 10 BOND
9/11/20	People	38	38	CSM 10 BOND
10/28/20	People	8	3	VP + Provost
11/16/20	People	10	7	Faculty Executive Senate
12/9/20	People	10	0	VP + Provost
12/10/20	People	25	13	W&S Committee
2/1/21	People	82	76	Faculty Senate
2/3/21	People	30	26	AALT
2/9/21	People	23+	22+	Presidents Search Forum
2/22/21	People	3	0	VP + Provost
2/24/21	People	22+	22+	ASI
3/11/21	People	5	5	Lecturer Appreciation and Virtual Service Fair
3/15/21	People	10	7	Cabinet
3/23/21	People	6	5	Athletics
3/24/21	People	27	26	Campus Planning
3/25/21	People	30+	30+	TWTS

students, faculty, staff and campus administrators. This outreach series (Table 2) enabled the SLSTF to meet with a variety of stakeholders at different levels within the institution. With every meeting, new perspectives and ideas were ex-

pressed and the efforts towards integrating sustainability continued to grow. This allowed the students' voice to be expressed among faculty, staff, and stakeholders that are key in influencing the changes being made so that they can better

align their work and collaborate to benefit the students in which they serve.

Discussion

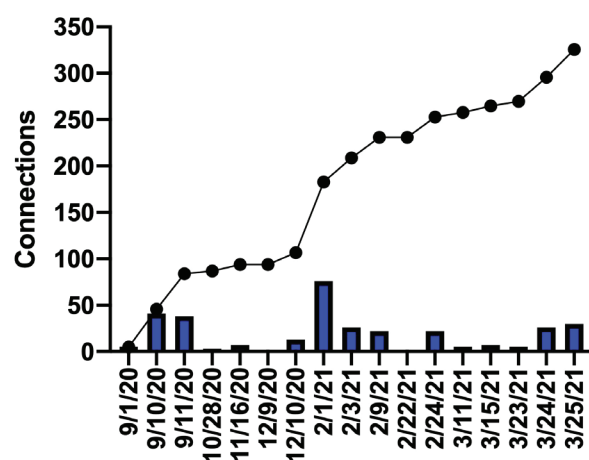
Results of the combined analyses indicate a large degree of interest in sustainability among Fresno State students, and that most students tend to view universities as exemplary models for the integration of sustainability (Figure 4). Existing concurrently, however, is the perception that Fresno State is not meeting expectations in this regard. This may seem inconsistent with the system-wide AASHE STARS participation, and even Fresno State's recent Bronze rating, although it is consistent with landscape analysis findings that the most numerous efforts are founded in student-led efforts; clubs, internships, committees, and student senate positions (Table 1). The high number of campuses with active student-involvement (13 campuses hold Earth Day events; 18 campuses have at least one student sustainability-related club) relative to the lower number of campuses with ancillary academic (seven campuses with faculty committees), operational (nine campuses with sustainable facilities), and/or presidential-level involvement (six campuses with sustainability commitments) exemplify this high priority of sustainability across CSU student populations. Despite the fact that students often represent a large demographic of campus populations, our findings show that more student governments are directly engaged in sustainability efforts than their faculty equivalents (13 vs. seven, Table 1), suggesting that student-led efforts towards helping campuses improve and better integrate sustainability warrant more support and recognition (i.e., Stone, 2021 and Thew et al., 2020). It may also suggest that student- and youth-led sustainability work can perhaps be used as an indication of whether or not an institution has asset-based mindsets (Mein, 2018). The prominence of student impact is also consistent with the findings of our Fresno State Student Sustainability Literacy Survey, where students self-report that it is their peers--their fellow students--who are the most influential in positively shifting their attitudes towards sustainability (Figure 3). If students and peer-support are truly more influential in affecting more sustainable behaviors, this may mean that student-leadership can play an even more impactful role than current curricula in reducing an individual's lifetime greenhouse gas emissions (i.e., Cordero, 2020).

Although the content presented online at the time of our analysis may not reflect the true breadth of campus sustainability initiatives, our findings suggest that student-led efforts appear to be prevalent across the CSU system and provide an overall sense of how committed and inclusive each respective

university is to achieving sustainability goals. While the landscape analysis indicated there are areas (i.e. course development & sustainability GEs) that other campuses are outperforming Fresno State in, we found that the relationships between our students and higher administration was comparatively unique. While other CSUs typically engage student input through an intermediary sustainability coordinator, Fresno State students are able to collaborate directly with senior leadership. Furthermore, such collaboration and quarterly discussions held between Fresno State students and higher administration have fostered the development of subject-expertise in the SLSTF, which further bolsters the impact and reach of our student leaders. This is apparent in the outcome of the Sustainability

Figure 6

New Connections Over Time



Roadshow, where students met with students, staff, and faculty, reaching over 300 unique people in less than one academic year (Figure 6). The more stable rates of forming new connections in Figure 6 may reflect the influence of finals, midterms, and increased scarcity of time. Given the already high demands on our students' time (Figure 5), it is likely that a slowdown of progress can be mitigated with full-time staff positions specifically dedicated to campus sustainability. This would ensure more timely, equitable, and consistent progress, especially given the rapidity with which ambitious change is needed (UNEP, 2021).

Though the timeline presented in figure 6 depicts successful progress that has occurred over the most recent academic year, it is also important to keep in mind the near decade-long efforts in which students have persisted and

diligently worked to establish trust, foster collaboration, and create campus precedents. Combining longer-term campus timelines and contextual histories (Figure 1) with shorter-term outreach metrics like Figure 6, it may be possible to quantify or better qualify rates of institutional transformation. Compared to where the campus was almost a decade ago, the recognition and support of sustainability as a top university priority is a culmination of bottom-up change affected by successive groups of student leaders. The critical relationships and history students have been able to build over both short and long time spans (Figure 1 and Figure 6) have further enabled a legacy and an inspirational outlook for campus sustainability. Students of Fresno State's Sustainability Club, SLSTF, and ASI have continually demonstrated their ability to produce actionable practices and policy adjustments, often outpacing parallel work by other campus committees and entities. Although student influence has led both rapid and long-term change, it is vital that work remains meaningfully coordinated across all the different parts of campus. Given the sheer importance of students in this work, their collaboration with the President, Vice President, Provost, faculty, and staff is crucial in further developing successful solutions. Students excited and anxious to see and be part of sustainable change should be supported to be part of taking action. Likewise, it is imperative that administrators view students as the leading assets they are (Mein, 2018) and remain actively receptive to working with students to develop effective solutions to these complex socio-environmental issues and challenges.

As important as students are in driving progress, it is important to consider the implications and potential burdens such work may bear on the student experience and, by extension, university learning outcomes. The results of the Fresno State Sustainability Student Time Survey indicate that students are overworked and spread thin between competing priorities of their sustainability work, coursework, clubs, committees, family commitments, social needs, employment, and self-care (Figure 5). Given the institutional setting of Fresno State, this added burden of sustainability work is not placed upon "typical" college students, but instead a diverse population of underrepresented, first generation, and Pell-eligible students. Research shows that such groups face significant barriers to civic integration and political power (Mitra et al., 2014) yet, within the context of our bottom-up approach, these students who already bear disproportionate disparities can be looked upon as sustainability experts and leaders. Research also shows that when viewed through asset-minded frameworks, these same stu-

dent groups become valuable contributors to the wellbeing of their communities (Mein, 2018 and references therein). Furthermore, the integration of sustainability into coursework presents another tremendous opportunity for reducing student time burdens, while also connecting curriculum to real world problems. A full institutional integration of environmental and climate justice, social justice, and economic problem-solving within courses has the potential to produce an entire generation of well-equipped graduates capable of developing solutions tailored to issues of any age. Tailoring curriculum to include these sustainability topics (i.e., UNESCO, 2017) while also increasing the amount of available sustainability-related internships and service-learning courses allows students to more meaningfully engage with curricular material and leave lasting impacts on their campus and community. Overall, the net effect of higher education can then alleviate unnecessary burdens on its student leaders, which then can empower students to be even more timely and effective in addressing our imperative and intersecting social and environmental crises (i.e., COP26).

Conclusion

Although a perception exists amongst student populations that Fresno State is not leading in the integration of sustainability, students have demonstrated that they are capable of affecting positive change in their own interest and in the greater interest of the University mission. The student-led sustainability efforts at Fresno State started as a grassroots and bottom-up approach, but have evolved dramatically over the past few years, leading to the establishment of paid positions and elevated responsibility. In this paper, we suggest it is necessary for the work of the students to be recognized and compensated in a way that empowers students to advance sustainability without being overburdened and detracted from other tasks.

Landscape results show that students have been key in making institutional changes within the campus community at Fresno State, across the CSU, and in other higher education environments. Activism and work provided by students not only contribute towards reaching sustainability goals, but can also be impactful on the general student population by ensuring expectations of meaningful learning experiences are met. It is necessary that these student-led initiatives are supported from the top-down and the work of the campus does not hinder student success. Fresno State is continuously evolving to develop the skills and talents of student leaders, supporting their efforts, and working towards a more sustainable future at both the grassroots and institutional level.

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The authors would like to thank Dr. Nancy Van Leuven, Kyle Zoldoske, Jason Vang, Laura Ramos and Thomas Esqueda for their landscape analysis support. We would also like to thank CSU Sustainability Manager Tamara Wallace, CSU Chico's Cheri Chastain, Fresno State's Project Manager Suzanne Shaw, VP Debbie Adishian-Astone, and President Saúl Jiménez-Sandoval for their ongoing guidance and support for much of this work. Strategic Energy Innovations (SEI) Emily Courtney, Jessica Redden, and their Climate Corp Fellowship Program were pivotal in providing the student leadership development, enabling much of this work. The authors would also like to thank our Summer 2021 California Climate Action fellows along with the journal editors and reviewers for their help improving the quality of this paper.

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