

Report and Recommendations of the Climate Change, Sustainability and Resilience Committee

April 19th, 2023

Committee Membership

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Executive Summary of Recommendations

Understanding and responding to climate change and sustainability and resilience challenges requires deep knowledge about drivers and impacts, and the power relations that underlie them both. While it is critical that we continue to expand and refine our understanding of the climate system, global environmental change, and their social-ecological impacts, the world needs solutions. Solution-oriented research must include a focus on social justice in recognition of the power relations that are responsible for causing climate change and sustainability and resilience challenges. A full understanding of climate change and sustainability and resilience requires multiple ways of knowing and approaching the problem, including contributions from the natural and physical sciences, social sciences, humanities, arts, and non-Western and Indigenous sciences.

Addressing climate change and challenges surrounding sustainability and resilience necessitates a comprehensive approach that recognizes that leadership on climate and environmental science is inextricable from understanding social drivers, including the social marginalization and economic exploitation that undergird and entrench this problem. As demonstrated within the UN Sustainable Development Goals, an international consensus on the importance of the social dimensions of climate change and global environmental change has emerged over the last several decades. This consensus prioritizes social justice issues, such as gender equality and no poverty, alongside climate action and affordable and clean energy. In order to fully embody UCSC's core institutional values we must not only strengthen our existing leadership in climate and environmental science, but also lead on the social justice dimensions that define this problem by substantively incorporating social justice across scholarship, teaching and operations, outlined in the goals below. UCSC's leadership in the paired domains of climate and environmental science and social justice will provide an excellent foundation to position our campus as a global leader in addressing climate change, sustainability, and resilience in ways that have real world impact.

UCSC can and must be a leader that models how to develop a new generation of scholars/activists/artists in the fight to avert climate catastrophe and ecological crisis. Training these change agents requires developing a robust, interdisciplinary understanding of the causes and impacts of—and responses to— climate change and sustainability and resilience challenges. It also requires moving beyond interdisciplinarity to develop transdisciplinary approaches to teaching, research, and operations, meaning that knowledge is integrated, rather than only conjoined. Transdisciplinary approaches entail synthesizing knowledge from multiple disciplines and epistemologies, or ways of knowing, to create an emergent and holistic understanding for developing effective, creative, and equitable climate responses. Developing such responses will require training our students, faculty, and staff to integrate and work across epistemologies to generate *new* conceptual, methodological, theoretical, aesthetic, and practical justice-centered approaches to research and education. For example, climate resilience - the ability to thrive, adapt, and stay flexible in the face of climate change impacts - is a core concept that requires intentional approaches in order to set the campus up for success in its teaching, research, and operational initiatives in the decade ahead.

Towards this boundary-spanning effort, we intentionally center alliances with Indigenous peoples, especially the Amah Mutsun Tribal Band, upon whose ancestral, stolen lands UCSC is located today, and who continue to steward these lands. Indigenous people worldwide safeguarded land, water

and biodiversity long before the predominantly White mainstream environmental conservation movement came into being. Indigenous peoples globally represent 5% of the human population, with title to about 20% of the earth's land, which contains 80% of our global biodiversity—this statistic reflects the fact that relationships between humans and the environment are not only interdependent, but co-constituted. Dominant environmental discourses, from notions of “wilderness” to the concept of the Anthropocene, are predicated on a nature/culture divide, from which truly equitable, efficacious, and enduring climate change and sustainability action cannot result. What Western epistemologies classify as resources or scientific objects into the generic category of “nature”, Indigenous scientific knowledge-practices engage with as kin, from more-than-human relatives (plants, animals, rocks), to spiritual and inanimate entities, to entire landscapes. While avoiding the essentialization and romanticization of Indigenous peoples, we propose a plan that makes possible meaningful collaborations with Indigenous scientific knowledge to bridge different worldviews towards climate and environmental justice.

Summary of Goals

Operations:

1. Build communities of care, resilience, and preparedness in the face of climate change.
2. Decarbonize UCSC to build an equitable, accessible, and fossil-free future.
3. Steward the water & land to support healthy social & environmental ecosystems.
4. Advance a circular economy in the consumption cycle.

Teaching:

5. Ensure all students graduate with a transdisciplinary understanding of climate change grounded in justice, experiential learning, and diverse approaches to knowledge.

Research:

6. Expand, value, and incentivize collaborative, solution-oriented, justice-centered, and diverse research approaches to climate change and sustainability.
7. With an ethos of reciprocity and respect, forge relationships with Indigenous peoples/organizations, which enable the co-production of knowledge and action plans towards climate justice.

Committee Charge and Background

Committee Charge

The committee was asked to address the following areas:

- Identify ways that UCSC can create and sustain a campus climate and culture that reduces environmental impacts while centering inclusive sustainability, advancing climate justice, empowering students, and engaging local communities/partners, including indigenous communities.
- Propose undergraduate and graduate student learning opportunities, including curricular and

extracurricular pathways (e.g. general education, experiential learning opportunities in natural and built environments, capstone projects, certificate programs, minors or majors) by which all students would have an opportunity to learn about climate change science and policy, climate justice, resilience and inclusive sustainability.

- Identify emerging or new collaborative interdisciplinary research areas related to climate change, climate justice, resilience and/or inclusive sustainability, to prioritize for campus resources. Provide a rationale for how these priority areas would advance UCSC's mission and research leadership position.
- Recommend high level strategies to evaluate and reduce the environmental impacts of meeting the university's mission on our campus and local community. This includes strategies to reduce greenhouse gas emissions (e.g., transportation, energy usage, renewable energy, and electrification infrastructure), increase sustainable food and procurement, reduce resource consumption and waste, and responsibly steward water, natural and cultivated lands, and more.
- Recommend strategies to improve climate resilience on campus, including strategies related to: fire safety, drought, climate anxiety, economic losses, climate justice, data driven assessment, and other issues that may emerge from the stakeholder engagement process.

Background

To meaningfully advance this work, the SPCC co-chairs determined early on that the committee needed to move beyond traditional notions of environmental conservation and sustainability. It was determined that two primary concepts would undergird the committee's work: climate resilience and climate justice. There are a myriad of academic studies, articles and definitions associated with these two terms, and it was necessary to identify the committee's working definitions for the purposes of meeting the charge.

The committee's working definition of climate resilience is as follows: the ability to thrive, adapt, and stay flexible in the face of climate change impacts. This definition was informed by the Union of Concerned Scientists (2022), The Chronicle of Higher Education (The Environmentally Resilient Campus, 2021), and committee discussions.

Climate justice can be understood as a:

“framework to recognize and redress the unequal distribution of costs and burdens of climate change and climate responses of various types. Moreover, climate justice also requires ensuring that those affected most severely by climate change participate in brainstorming, developing, and implementing climate responses” (Kashwan 2021, 2)

The committee also engaged with a more critical understanding of environmental justice based on David Pellow's articulation of critical environmental justice studies.¹ Critical environmental justice studies aims to move beyond limitations in earlier studies of environmental justice, including by: focusing on multiple forms of inequality and difference (e.g. race, class, gender, sexuality, species, etc.);

¹ Climate justice can be understood as the application of environmental justice principles to the problem of climate change (Schlosberg and Collins 2014).

employing multiscale analyses of the causes, consequences, and possible resolutions of environmental justice struggles; viewing state power as entrenched and embedded, and as something that must be confronted rather than embraced; and by examining how certain human and non-human populations are seen as expendable (Pellow 2017). The committee met with David Pellow to discuss this understanding of critical environmental justice studies including how other universities are beginning to incorporate climate justice into their research, teaching, and operations.

Engagement Strategy

The Committee's overall engagement strategy aimed to provide a multitude of ways for the campus community to provide feedback to the committee to ensure that all community members had at least one option that worked for their specific needs and time or capacity constraints. The committee designed engagements that aimed to target a small number of specific community members for specific feedback, and it also designed engagements that were open to all community members. A short informational briefing on the Committee's charge, composition, and role within the strategic planning process was provided at the beginning of engagements to inform participants of the climate, sustainability, and resilience related aspects of the strategic planning.

The Committee developed a portfolio of different engagement format templates that were used to collect feedback from a wide range of campus community members for purposes of, for example, identifying needs, articulating and prioritizing goals, and refining goals, metrics, and narratives. The template methods were then adapted to suit the needs of particular groups or to target specific feedback for collection. Various versions of a Jam workshop used Google's online Jam service to provide participants with an easily accessible, usable, and transparent way to provide feedback to the committee and collectively brainstorm climate, sustainability, and resilience related needs, goals, and strategies. A small group discussion was typically paired with a Jam activity to clarify or expand on Jam feedback and to identify areas of consensus. The Jam activity was also used in larger engagements with the use of breakout rooms, for example during our joint town hall with the research excellence committee. The Jam activity was also adapted for tabling as a way to gather feedback from passerbyers, for example at the Student Climate Conference. Additionally, the Committee developed several original focus group question protocols for use within our focus groups, which aimed to stimulate cross-stakeholder deliberation for example among provosts, chairs, and directors from different units of campus. Question protocols to prompt discussion and more targeted feedback from specific collections of community members were also created as needed. During winter quarter, we created short surveys to allow us to understand which previously identified needs and areas were seen as the highest priority for particular groups of participants. We would then focus our discussion or Jam activity on the particular needs and areas a group of participants found most important. To gather feedback on our draft goals, metrics, and narrative, we also shared multiple versions of a Google doc with certain goals with key groups, such as the leadership of the Center for Coastal Climate Resilience and the Institute for Social Transformation.

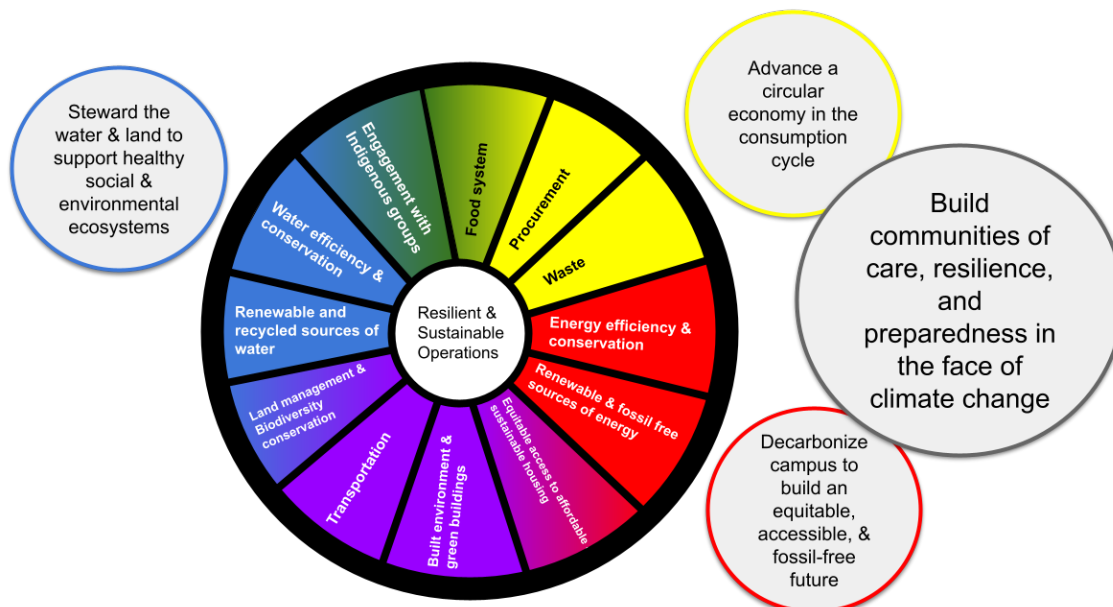
Overall, our engagements gathered feedback from approximately 778 campus community members. A table summarizing these engagements can be found in Appendix 1.

Key Themes from Engagements

Our engagement with the campus community yielded multiple themes that were raised across many engagements including with participants from across the university. In research, these include: visibility of all climate research, research programs, and funding opportunities on campus; programmatic efforts to build community among climate and sustainability researchers; research funding and transdisciplinary grant writing support; incentives for rewarding transdisciplinary climate, sustainability, and resilience research; community partnerships and community-engaged scholarship; and more. In teaching, these include: student understanding of climate change informed by multiple disciplines and diverse perspectives; community engaged, serviced-based and other forms of experiential learning; student groups and leaders currently working on climate change; climate anxiety; curriculum development surrounding climate justice; and more. In operations, these include: affordable and sustainable housing; transportation; food systems; zero waste; fossil free and renewable energy sources; energy efficiency and conservation; water efficiency and conservation; relationship with Amah Mutsun Tribal Band; education and training for all campus members regarding sustainability; and transparency regarding progress on sustainability goals; using campus operations for experiential learning; and more. These themes are reflected in the following goals UCSC must meet to maintain and strengthen its leadership position on climate change, sustainability, and resilience.

Goals

Operations



Goal 1: Build communities of care, resilience², and preparedness in the face of climate change

Metrics

- By end of FY 2024 - complete an updated operational 5-year Sustainability & Climate Action Plan to modify existing and set new specific benchmarks, and track progress on priority topics.
- Annually beginning FY 2025 - Coordinate transparent reporting on metrics for all identified priority areas through the terms of the Sustainability & Climate Action Plan and Campus Strategic Plan.
- By end of FY 2029 - complete another updated operational 5-year Sustainability & Climate Action Plan to modify existing and set new specific benchmarks, and track progress on priority topics.

Priority topic areas identified as of the publication of this report:

- Incorporation of climate awareness and sustainability into onboarding materials for all campus newcomers (students, staff, faculty)
- Annual implementation of and progress on sustainability policy measures that center diversity, equity, inclusion and justice within sustainable operations
- Funding and availability of new and ongoing mental health and educational resources in response to increasing climate anxiety
- Implementation of new and ongoing emergency preparedness measures in the face of climate change
- Increase in availability and accessibility of safe, sustainable and affordable housing

Narrative

Background and Rationale:

UCSC must focus on empowering faculty, staff and students with the tools and resources to prepare for a changing world. The growing presence of climate anxiety on campus, in addition to ongoing social and ecological challenges, is adding yet another burden to the already daunting task of tackling climate change and environmental justice worldwide. Increasing the availability of mental health resources and physical spaces dedicated to self-care at UCSC will be essential. Enhancing awareness and individual preparedness regarding emergency planning and training efforts in relation to wildfire, drought, flooding and more, is critical. Being cared for, educated, and prepared will empower UCSC community members to more effectively serve in their important roles as teachers, researchers, staff members, administrators, and students.

At UCSC, we are uniquely positioned through our curricular and co-curricular programming to educate on climate change and resilience, and we can further build upon those strengths and increase the availability of operational resources to achieve this goal. The Campus' commitment to sustainable

² UCSC SPCC's working definition of climate resilience: the ability to thrive, adapt, and stay flexible in the face of climate change impacts

operations presents a unique opportunity for students to practically apply classroom knowledge in the field by using the campus operations as a living learning laboratory and encouraging interdisciplinary innovation in the campus' day-to-day operations. This active engagement with climate solutions is essential to empower our students, staff and faculty while highlighting the significant work already underway as well as the challenges the university faces in climate adaptation.

In addition to making curricular commitment to students (see SPCC Teaching goal), strategies to achieve this goal will include enhancing existing and building new educational resources through the myriad of cross-divisional co-curricular programs, departments and Colleges across campus including numerous Research and Teaching Centers, Student Affairs organizations, the Sustainability Office, Center for Agroecology, Arboretum, Natural Reserve System, Operations, and Staff Advisory Board.

It is equally important that UCSC advances justice-centered and equitable approaches to its sustainable operations, services and programs if we are to effectively build diverse and meaningful communities of care. UCSC will increase the availability and optimize the distribution of resources to support access to safe, sustainable and equitable campus housing. Additionally, our campus will build upon the foundation of inclusive sustainability (People of Color Sustainability Collective), by centering social justice and Indigenous knowledge-practices in its approaches to sustainability and resilience policies and programs.

Finally, it will be crucial for UCSC to communicate transparently to a broad audience about its progress in advancing all of the Strategic Plan goals for Climate Change, Resilience and Sustainability. UCSC will maintain effective technological tools and utilize modern, culturally relevant communication channels in a predictable, ongoing basis to communicate key performance metrics and progress on goals.

Challenges and strategies to overcome them:

- Funding mechanisms for sustainability educational programs are limited, consider pursuing external grants and internal opportunities such as student fee measures (like the Carbon Fund).
- Unpredictable variability in actual climate impacts is inherent with climate change, UCSC will need to have the ability to quickly flex and pivot in unanticipated ways.
- Diversity and inclusion within the sustainability professional field is lacking (Green 2.0, 2022)). UCSC will need to continue to prioritize centering diversity and equity in hiring processes in order to have effective representation and develop appropriate policy solutions that center diversity, equity, inclusion, and justice.
- Decentralized campus processes can be a challenge. Prioritize identifying and overcoming existing institutional and structural barriers.
- Current capacity is limited and may present logistical challenges related to building the capacity of the campus reserve, farm, arboretum, and other relevant campus operational units to handle significantly more students and educational programs." Explore opportunities to strengthen relevant units to support plan implementation.
- Maintaining up-to-date technology and functional website platforms can be a challenge. UCSC should prioritize maintaining state of the art website platforms and other technological tools in order to effectively report on metrics.
- Climate anxiety is not relegated only to the environmentally-minded or students. Being able to reach all those on campus who experience climate anxiety will require a diversity of approaches

and collaboration with offices and units that are not traditionally associated with sustainability, climate change, and resilience.

- Engage and partner with local and regional climate change and resiliency efforts to exchange information, better understand regional climate challenges and create a forum for potential collaboration on solutions.

Goal 2: Decarbonize UCSC to build an equitable, accessible, and fossil-free future

Metrics

- By end of FY 2024 - complete an updated operational 5-year Sustainability & Climate Action Plan to modify existing and set new specific benchmarks, and track progress on priority topics.
- Annually beginning FY 2025 - Coordinate transparent reporting on metrics for all identified priority areas through the terms of the Sustainability & Climate Action Plan and Campus Strategic Plan.
- By end of FY 2029 - complete another updated operational 5-year Sustainability & Climate Action Plan to modify existing and set new specific benchmarks, and track progress on priority topics.

Priority topic areas identified as of the publication of this report:

Become fossil fuel free for Scopes 1 and 2 greenhouse gas (GHG) emissions by 2030.

Transparently report on the following metrics annually to track progress:

- Annual GHG emissions and emission reductions, by scope and by type of GHG
- Share of equipment converted from natural gas to electric and transition from reliance on natural gas fuel sources at campus cogeneration plant
- Carbon Footprint of campus electricity sources (ie: Electricity from Utility, natural gas / biogas, renewables)
- Megawatts (MW) of solar and other renewable energy sources installed or transitioned from gas

Track and reduce transportation Scope 3 GHG emissions. Increase accessible, equitable and zero emission (or ultra low emission) transportation options, while also reducing single occupancy vehicle trips and improving alternatives in order to create a campus environment where alternative transportation will thrive and be appealing to the campus community.

Narrative

Background and Rationale:

UCSC must address its own role in contributing to greenhouse gas emissions in order to comprehensively combat climate change. The associated health issues, extreme weather disasters, loss of land and homes, and economic consequences of climate change impact under resourced communities and people of color the first and worst (United Nations). This also hits home for many students, faculty and staff, who come to UCSC from a wide array of personal backgrounds and from diverse communities

across the globe. Becoming fossil-free in the long term will significantly reduce the university's contributions to the environmental injustices associated with the burning of fossil fuels worldwide. These efforts will include rapidly increasing the pace of energy efficiency measures, adopting renewable energy sources, installing electrical vehicle charging infrastructure, rolling out an all-electric bus fleet, reducing reliance on vehicles, and ultimately working towards ending the campus' consumption of fossil fuels, ideally by 2030.

It is important that the university achieve this goal while simultaneously strengthening power resilience in order to maintain the integrity of academic research, teaching, and safety in the face of increasingly frequent power outages as the campus continues to grow to educate and house more students. UCSC will explore technologies and innovations to increase power resilience such as the development of micro-grids, installation of battery storage, and more. Decarbonization also presents yet another opportunity for innovative research, and for students to practically apply classroom knowledge in the field by using the campus as a living learning laboratory and encouraging interdisciplinary innovation in the campus' day-to-day operations. To support these myriad efforts, the university will take advantage of the increasing funding opportunities, grants and incentives at the state and national level that are focused on advancing decarbonization and electrification.

Challenges and strategies to overcome them:

- The campus electrical infrastructure will require significant upgrades in order to accommodate electrification of all campus energy use, the electrification of the bus and vehicle fleet, and providing more EV charging for personal vehicles. Incorporate upgrades into existing maintenance processes and pursue available grants and incentives for electrification infrastructure.
- UCSC experiences frequent power outages, impacting the resilience and integrity of research/instruction, business continuity, and overall quality of life. Work with the utility provider to increase availability and reliability of campus electrical service. Prioritize power redundancy by pursuing multiple backup options as the campus electrifies.
- Skepticism about the slow pace of change and hesitancy regarding the effective deployment of new technologies and ways of doing business will inevitably arise as the campus overhauls infrastructure, processes, and practices that have been in place for several decades. The campus will need to employ appropriate best practices in change management, workforce development, and personnel hiring as decarbonization rolls out in the years ahead.

Goal 3: *Steward the water & land to support healthy social & environmental ecosystems*

Metrics

- By end of FY 2024 - complete an updated operational 5-year Sustainability & Climate Action Plan to modify existing and set new specific benchmarks, and track progress on priority topics.

- Annually beginning FY 2025 - Coordinate transparent reporting on metrics for all identified priority areas through the terms of the Sustainability & Climate Action Plan and Campus Strategic Plan.
- By end of FY 2029 - complete another updated operational 5-year Sustainability & Climate Action Plan to modify existing and set new specific benchmarks, and track progress on priority topics.

Priority topic areas identified as of the publication of this report:

- Responsibly steward water and land - work collaboratively with other divisions to identify projects from relevant plans currently under development such as the Non-Potable Water Master Plan, Wildfire Vegetation Management Plan, Comprehensive Habitat Conservation Plan, and beyond.
- Develop healthy social and environmental ecosystems - develop metrics related to square footage of sustainable buildout of campus housing to LEED Gold or higher standards, water use and non-potable water sources, increased mileage and expansion of safe and comfortable pedestrian and cycling pathways, and more.
- Expand upon the existing work of the Amah Mutsun Tribal Band on campus, such as at the Arboretum, to increase Indigenous engagement, including development and implementation of formal agreement(s) with Amah Mutsun to provide land access, provide cultural expertise support on projects, and to help steward ecosystems with traditional ecological practices.

Narrative

Background and Rationale:

UCSC is situated in a unique location, with spectacular vistas of the ocean at the intersection of many different habitats including redwood forest and open meadows, natural and built lands, multiple watershed drainages, limestone karst topography, and more. This exceptional environment has offered opportunities to build bridges between teaching, research, and operations while promoting land stewardship and supporting student learning by leveraging the campus as a living laboratory, most notably through programs and courses at the Center for Agroecology, the Arboretum, and the Campus Natural Reserves. Responsible stewardship of these varied ecosystems also requires collaboration with our local community members and centering the voices of the Amah Mutsun Tribal Band.

Effective stewardship at UCSC will involve a variety of strategies to support biodiversity and preserve habitats while simultaneously increasing housing and enhancing accessible, safe circulation pathways for active transportation and Americans with Disabilities Act (ADA) needs. Supporting sustainable and accessible transportation options such as walking, biking, and increasing charging stations for electric vehicles and bus fleets will be essential as the campus continues to grow. A comprehensive Habitat Conservation Plan for the Residential (Main) Campus and Westside Research Park will include a conservation strategy for endangered and threatened species, and a Wildfire Vegetation Management Plan will enhance UCSC’s climate resilience. Additionally, Indigenous knowledge-practices, traditional ecological management practices, cultural preservation of known archaeological sites, and dedicated land access for the Amah Mutsun to help steward ecosystems will be

essential to merging environmental justice practices with existing sustainable land stewardship practices at UCSC.

Increasing temperatures and long-term drought necessitate that UCSC continue to serve as a leader in best practices in water management. In the decade ahead, water conservation measures will be ongoing, including the reduction of irrigation for ornamental landscaping. The campus will also begin to explore potential non-potable and recycled water sources to reduce reliance on treated drinking water from the City of Santa Cruz for a variety of irrigation applications, including growing food and maintaining landscapes. Non-potable water options for the campus to explore include groundwater, gray and black water treatment facilities, and dual water infrastructure systems to pipe greywater for landscaping and toilet flushing.

Challenges and strategies to overcome them:

- UCSC does not currently have a formal agreement with the Amah Mutsun Tribal Band although there are many collaborative efforts already underway, such as at the Arboretum. The university should consider a formal agreement and partnership by co-developing a Memorandum of Understanding (MOU).
- Developing new infrastructure for vehicles and housing uses up limited land and resources. The university will want to continue to approach infrastructure and development sustainably, using the smallest, densest possible footprints. While there are many voices that demand more parking and circulation for vehicles, the university should prioritize shared and active transportation modes with appropriate, equitable funding streams and fees.
- The visible impacts of effective wildfire prevention and management of forest lands can be alarming to members of the broader community who visit campus, including the Campus Natural Reserves. Increased educational efforts such as signage and community events would be helpful.
- Climate change and the City's drought response efforts may necessitate more aggressive water management in the future. Building a flexible water system will help the campus adapt to uncertain water circumstances. Maintaining effective communication with the City and greater community members will also be essential as regulatory requirements evolve.

Goal 4: Advance a circular economy³ in the consumption cycle

Metrics

- By end of FY 2024 - complete an updated operational 5-year Sustainability & Climate Action Plan to modify existing and set new specific benchmarks, and track progress on priority topics.
- Annually beginning FY 2025 - Coordinate transparent reporting on metrics for all identified priority areas through the terms of the Sustainability & Climate Action Plan and Campus Strategic Plan.

³ The EPA (2022) definition of circular economy: A circular economy reduces material use, redesigns materials, products, and services to be less resource intensive, and recaptures "waste" as a resource to manufacture new materials and products.

- By end of FY 2029 - complete another updated operational 5-year Sustainability & Climate Action Plan to modify existing and set new specific benchmarks, and track progress on priority topics.

Priority topic areas identified as of the publication of this report:

- Harness the spending power of the university to support sustainable, local, and diverse businesses. Create and enhance tools to support the purchasing of environmentally preferred products. Reimagine campus services to reduce consumption.
- Leverage the campus' food system to address climate change and sustainability challenges. Refine and develop metrics to measure the impact of the campus' food system. Create opportunities to support local, regenerative, and plant-based options.
- Support a culture of reuse and reusables. Build infrastructure that supports wide-spread use of reusables. Develop metrics to track the rate of reusables used. Extend the useful life of university owned goods and provide opportunities for campus to participate in reuse.
- Meet UCSC zero waste and diversion goals. Develop metrics that drive waste-related solutions to address the specific needs of different areas of campus. Pair education and outreach programs with consistent compost, recycling, and landfill infrastructure to enable proper waste management.

Narrative

Background and Rationale:

The purchase, consumption, and disposal of goods on campus drives the mission of the university but also directly contributes to the environmental footprint of UCSC.

The consumption life cycle begins with purchasing goods for all manner of activities on campus. This presents an opportunity to use UCSC's spending power to influence the businesses UCSC chooses to do business with. Choosing companies that integrate environmental, social, and governance (ESG) principals into their operations, are small, local, and/or diverse businesses, and who sell products that are transparent about their supply chain and its related environmental and social impacts will enable UCSC to use its financial resources to support sustainability-minded companies. The Central coast region is also blessed with a wealth of small-scale, minoritized growers who are practicing organic climate-smart agricultural practices. UCSC's operational commitment to these regional producers will support the campus' regional standing, continue to position UCSC as a leader in sustainable and socially aligned food purchasing and further support recruitment and retention efforts in south county.

Following the acquisition of products, how they are consumed on campus offers another opportunity to reduce UCSC's environmental footprint. This can vary widely from buying the most energy or water efficient equipment to purchasing products that come in minimal packaging. Extending the useful life of products, through reuse and refurbishment, can reduce the need to purchase new items, thus reducing resource use. Creating a campus ecosystem that supports sustainable actions by campus users is necessary to encourage sustainable habits. This could include installing more water bottle filling stations or easily accessible utility sinks in dorms to enable proper cleaning of reusable eating ware.

Consumption requires proper disposal of items once they have reached the end of their useful life. A consistent, accessible, and convenient waste system will provide campus users a simple process to

dispose of most common waste items on campus. This requires consistent three waste streams (recycling, compost, and landfill), zero waste stations with effective signage that is sized appropriately for the space and prominent for campus users to locate. Specifically, UCSC must increase the number of compost bins across all areas of campus to match landfill and recycling bin availability. This is key to ensure a campus user does not need to spend any additional effort to compost an item.

Not only is waste a resource and land use issue, waste is also a climate change issue as waste disposal creates greenhouse gasses. For example, organic waste that enters a landfill decomposes to create methane gas, a significantly more potent greenhouse gas than carbon dioxide. Tracking waste and progress to meeting the UC's waste goals will contribute to a more comprehensive accounting of UCSC's Scope 3 emissions.

Proper infrastructure will only get campus so far, and significant education and outreach will be needed to create a culture of a circular economy on campus. This will not only educate campus about how to sort waste properly, but also reduce the amount of waste generated by focusing on intentional purchasing and using tools like Surplus Outlet to reuse items and CruzBuy to facilitate and track sustainable spending.

Finally, not only can UCSC use campus as a living learning laboratory but UCSC can use campus infrastructure to help build a circular economy. By using art and design, campus infrastructure can better interact with campus users to fuel desired behavior changes. For example, art projects such as creating eye-catching and futuristic looking water bottle filling stations and zero waste stations could draw users in to encourage community members to become more thoughtful and responsible consumers.

Challenges and strategies to overcome them:

- Campus culture revolves around easy and affordable online shopping which increases packaging waste and many times aren't sustainable products. Instead, consumer awareness, alternatives to traditional consumption patterns, and simplifying tools like CruzBuy to make sustainable purchasing the go-to option.
- Many times a sustainably sourced product is more expensive. Campus budgets should reflect this price differential. Additionally, campus units should review purchases to reduce non-mission critical spending to offset sustainable product's price premium. For example, buying one large sustainable raffle prize for tabling instead of purchasing high quantities of inexpensive swag.
- Purchasing decisions are decentralized and there is a general lack of awareness about how to purchase sustainable items. Training and resources that share alternatives (including how to reduce purchasing) and how to conduct research to determine the most sustainable product will be necessary.
- General confusion about the waste sorting process creates a large amount of contamination in the waste system. A coordinated outreach plan with a diverse array of resources, outreach avenues, and education programming targeting specific demographics on campus can help, in addition to consistent signage and infrastructure.

Teaching

Goal 5: Ensure all students graduate with a transdisciplinary understanding of climate change grounded in justice, experiential learning, and diverse approaches to knowledge.

Metrics

- Establish a Task Force, including faculty, staff, and students, from across all 5 divisions, college Provosts, and representatives from the Teaching and Learning Center and Academic Senate to develop a **required basic curriculum** for teaching climate change and climate justice. This might include a required course (e.g. GE), set of course options, modules within existing required courses for majors, etc. Fall 2025
 - Task Force produces a recommendation to the Chancellor by Spring 2024
 - Proposal submitted to the Academic Senate for approval by Fall 2025
 - Teaching team identified and compensated for summer course development. Spring 2025
 - Course launches. Fall 2025
- As a stopgap measure, all incoming first year students should be required to take one existing course related to climate change and/or climate justice from an approved list identified by an interdisciplinary Task Force. Fall 2024
- UCSC should create, and regularly update, a list of courses, course sequences and tracks that have climate content, and make that list readily available to both college advisors and departmental undergraduate advisors. Summer 2023.
- Create, fund, and launch a new center dedicated to research and teaching in the area of climate justice, including with focal areas on Indigenous climate justice and climate resilience (see Research Goal #1) as soon as possible
- Create incentives for departments and colleges to develop programs to **deepen** climate education (such as a climate certificate, a transdisciplinary climate minor, a transdisciplinary major, and climate tracks in departmental majors, where appropriate) on campus as soon as possible
- Create and fund opportunities to recognise and support student-led learning, including peer-to-peer education, co-curricular programming, student-facilitated experiential learning courses, and community engagement.
- Hire a cadre of Professors of Practice and/or Teaching Professors, with diverse expertise in climate change and climate justice. To bridge the curricular challenges across majors and disciplines, a target of two climate-focused teaching professors per academic division is recommended.
- Consider how the Cota Robles Fellowship program and the new paired student support program for Cota Robles and Doris Duke Fellows through the Institute for Reimagining Leadership might

serve as models for a new expanded fellowship program. This new expanded program could strengthen and diversify climate change research by supporting Cota Robles-eligible students with research interests focused on climate change, sustainability, and resilience, including climate justice. This could be done either through expansion of the existing Cota Robles program or through a new program led by the Center for Reimagining Leadership . Winter 2024.

- Create interdisciplinary climate and experiential learning focused pedagogical training available to all graduate students

Narrative

Background/ Rationale:

Responding to climate change is the defining challenge of our students' generation. In order to effectively, creatively, and equitably respond to this existential crisis, it will be necessary to utilize all available tools and approaches. Knowledge and expertise from, and across, all disciplines and epistemologies must be engaged and leveraged. Towards this end, UCSC must ensure all students graduate with an understanding of climate change that is transdisciplinary, epistemologically diverse, and rooted in climate justice and experiential learning. This education must also enable students to critically evaluate whether certain responses and solutions are effective, equitable, and sufficient. Building on our existing strengths in climate science, pursuing this goal will position UCSC to lead the nation in preparing the next generation of innovative and equity-minded leaders in climate response across all workforce sectors. It will also help UCSC continue to attract outstanding graduate students who are increasingly interested in pursuing climate-justice related training and research across all disciplines, and ensure that our teaching prepares our students to engage with and contribute to emerging trends in equity-centered climate policy solutions in California, nationally and globally.

Epistemologically diverse approaches are also critical in training the next generation of climate researchers, practitioners, policymakers, and activists. It demands both strengthening and indigenizing UCSC's climate education and learning opportunities to ensure students understand not only scientific ways of knowing, but also artistic, humanistic, and justice-centered approaches to understanding and responding to climate change. Centrally, this training must also include Indigenous ways of knowing and Indigenous climate justice, which emphasize how harms resulting from historical and structural processes related to settler colonialism must be addressed to effectively and equitably tackle climate change.

Experiential learning is central to this approach for multiple reasons. First, pedagogical research clearly shows the benefits to student learning through inquiry-based field learning experiences that also have positive impacts on metrics associated with retention such as sense of belonging and disciplinary identity (Zavaleta et.al., 2020, Beltran et.al., 2020, Race et.al., 2021). Secondly, research also indicates that action-oriented, hands-on learning is a powerful antidote to climate anxiety (Lawrance et.al., 2022, Inguli and Lindbloom, 2013). Thus, this goal not only ambitiously positions our graduates to lead on climate change, it is also highly aligned with our student success goals to close equity gaps and increase 4 year graduation rates. Experiential learning can take multiple forms. Climate education and learning on campus should more fully take advantage of on-campus living lab resources, including the campus

reserve, arboretum, and farm. Additionally, UCSC should better support and scale up programs for off-campus experiential learning that provide opportunities for students to gain experience working with non-governmental organizations (NGOs), community organizations, policymakers, tribes, and businesses on climate and sustainability related responses. Our engagements with students also demonstrated a strong desire to participate in climate-related research occurring on campus. Campus support for financial remuneration and scholarships for these opportunities is essential to ensure broad accessibility. Experiential learning opportunities can be enhanced by recognizing and supporting student-led learning opportunities, which would elevate existing student knowledge and leadership on climate change. This would further promote student success, belonging, and academic efficacy. These opportunities should include peer-to-peer education, co-curricular programming, student-facilitated experiential learning courses, and community engagement, including in students' own communities, many of which are on the frontlines of climate change and injustice.

Several strategies could be used to ensure all undergraduate students graduate with this knowledge and experience. There is broad agreement that a **required basic curriculum** that exposes all undergraduate students to climate change and climate justice is desirable. The design of this curriculum should be a **bottom-up process**, co-designed with deep collaboration from all 5 divisions, the colleges, the Senate, and staff and student representatives through for example a task force created for this purpose. While guest lectures from outside community members and practitioners would be welcome and important, we urge against a model that simply loosely knits together professors from various disciplines in a string of diverse but unconnected guest lectures. Rather, we encourage the CP/EVC to provide course development resources that would allow faculty and lecturers across all 5 divisions and the colleges to generate learning outcomes and associated content collaboratively. Recognizing that careful curriculum development takes time and community engagement, and also the urgency of climate change, while the new curriculum is being developed, all incoming first year students should be required to take one existing course related to climate change and/or climate justice. These courses will be determined by an interdisciplinary Task Force during the summer 2023. Members of the Task Force should include faculty, staff and students, and should be compensated with summer salary and/or stipends. We also encourage departments (with populous majors) to add at least one climate-related course to their major requirements if possible. In addition, degree programs should provide students with **opportunities to dive deeper** into climate change from multiple transdisciplinary and epistemological perspectives, including through the **creation of new interdisciplinary majors and minors, new climate related tracks or courses within existing majors, or new certificate programs**. One such major or minor might be offered through a new center for Indigenous climate justice. These new learning pathways should offer, where appropriate, team teaching opportunities with graduate instructors, lecturers, and faculty. Finally, experiential and action-oriented programming that centers climate justice could be integrated beyond course work through summer internship experiences (including existing programs such as STEM Diversity, CAMINO, and (H)ACER and new potential opportunities) and summer bridge programs that are aimed at supporting transfer students.

At the graduate level, students should have access to training and information on how their discipline relates to climate change and on climate-related career pathways for their particular degree. A regular cross-campus speaker series on climate change, possibly building on the Kamieniecki series, and access to a centralized resource that connects faculty in different disciplines with climate change themes

in their research (as proposed elsewhere) would support exposure to climate change career paths. These resources would also facilitate formation of cross-disciplinary mentoring for graduate students interested in exploring more cross and transdisciplinary climate justice themes in their research programs. In order to strengthen and diversify graduate student research on climate justice and resilience, the Cota Robles Fellowship program should be expanded to include 2 additional fellowships for climate justice and resilience-focused graduate students. There may also be opportunities to engage with UCSC alumni that are working in climate-justice and climate change related fields through a more formal mechanism to connect alum to current students. Additionally, because graduate students in their role as ASEs will be supporting and providing undergraduate climate instruction, consistent pedagogical training across divisions on climate and experiential learning is needed.

Challenges and Strategies to Overcome them:

A primary challenge to achieving this goal is time to degree and department limitations on increasing curriculum unit requirements. A mandate from the CP/EVC and the Academic Senate, in addition to resources for curriculum development from the CP/EVC is needed to implement changes to curriculum requirements. Additionally, interdivisional collaboration for example, in the form of a task force with representation from all divisions, including the colleges and community members such as Amah Mutsun could identify necessary learning outcomes, design new curriculum or redesign existing courses, and make recommendations to the Senate and the Chancellor related to implementation details.

The other primary challenge will be dedicating funding and staff and other support to design or redesign new courses or curriculum, alter curriculum requirements in degrees and departments including by adding climate-related tracks within majors, as well as provide sufficient teaching capacity to ensure all UCSC students can participate. Staff support will be necessary to design, implement, and communicate curriculum changes, and new courses will require sufficient instructor and teaching assistants positions. Faculty should be compensated for this labor, through course releases and/or stipends.

Additional funding will also be required to expand experiential learning programs on and off campus. In particular staff time to facilitate coordination would be a key support to ensure success of this ambitious goal. There are logistical challenges related to building the capacity of the campus reserve, farm, arboretum, and other relevant campus operational units to handle significantly more students and educational programs. Additionally, internships and other experiential learning opportunities with external organizations would similarly require funding. Partnering with NGOs and businesses on creating experiential learning programs may help create necessary funding.

Research

Goal 6: Expand, value, and incentivize collaborative, solution-oriented, justice-centered, and diverse research approaches to climate change and sustainability.

Metrics

- Create, populate, and provide sustained staff and GSR support for a publicly accessible, online clearinghouse of climate, sustainability, and resilience-related teaching, research, graduate students, faculty, and programs by the end of AY2025.
- Create, fund, and staff a new Center for Climate Justice, with focal areas in, among others, Indigenous climate justice and climate resilience within two years.
- Conduct a faculty search to lead the new Center
- Inventory existing extramural funding that supports collaborative, justice-centered, solution-oriented or diverse research approaches to climate change and sustainability within 1 year.
- Increase extramural funding secured from 2023 levels that supports collaborative, justice-centered, solution-oriented, and/or diverse research approaches to climate change and sustainability within the next 10 years.
- Develop training resources and structured opportunities to enable more faculty and students across divisions to participate in a wider variety of community engaged research within 2 years. including a cluster hire to identify outstanding ladder-rank and teaching faculty in the area of community engagement.
- Conduct a review of policy and administrative barriers to community engaged scholarship and residential visiting programs for activists within 1 year. Remove policy and administrative barriers within 3 years.
- Track and raise funds for regular community building events to enable informal and formalized interactions among diverse climate scholars, and foster collaborative relationships around climate, sustainability, justice, and resilience research. This may include a new physical space or the creative adaptation of underutilized spaces and incentives to encourage participation.
- Undertake a bold cluster hiring initiative to identify outstanding ladder-rank and teaching faculty in the area of climate justice, sustainability and resilience with the intent of building a critical mass of research and teaching faculty across all divisions Immediately scale up programming to incentivize and reward transdisciplinary, collaborative work, through course releases, seed funding to initiate and sustain collaboration, and amending merit review criteria through a CAP/EVC/VPAA taskforce.

Narrative

Background and Rationale:

Our campus has long recognized the importance of interdisciplinary collaboration, and this remains essential to addressing climate change and other sustainability and resilience challenges. Building on this existing strength as well as our mission, which is rooted in a commitment to social justice, UCSC should incentivize climate, sustainability, and resilience-related research that extends beyond interdisciplinary collaboration to also include transdisciplinary collaborations, which include different ways of knowing. In recognizing and valuing diverse approaches to knowledge, UCSC will be positioned as a global leader in understanding the interactions between the physical drivers and

biological impacts, with the social, political, and justice dimensions of climate change—a necessary shift that is gaining interest and support across policy, academia, the private sector, the arts, and the public. Home to a diverse array of world renowned climate-focused scholars and artists, a culture of interaction between diverse perspectives and approaches, a campus-wide commitment to equity and social justice, a wealth of innovative and experimental research, and close proximity to the epicenter of advanced and emerging technology in Silicon Valley, UCSC is uniquely well-positioned to achieve this goal.

Our engagement with the campus community yielded several strategies to support this goal. As related to enhancing diverse collaboration, we must identify and make visible the myriad climate-related instructors, courses, research activities, artistic projects, programs, and ways of knowing that exist across campus. Situating individual research in a broader campus-wide community is a critical prerequisite to catalyzing justice-centered and solution-oriented collaboration among UCSC faculty and affiliates. A crucial first step is expanding existing efforts to map faculty research across the divisions; this will involve working toward a database and accessible online search tool that can enable members of the UCSC community to readily find and connect with individual scholars and research programs related to climate change, sustainability and/or resilience. Augmenting this digital infrastructure with physical spaces and regular community building events that connect diverse researchers, artists, students, community-partners, and others offers an exciting opportunity to actively encourage novel collaborative relationships and research projects. Regular community building programs should be supported by dedicated staff and be designed and hosted in collaboration with all five divisions, with co-sponsorship by one or more centers/institutes across campus, such as the Center for Coastal Climate Resilience and/or the Seymour Marine Discovery Center. Broad participation in these critical programs should be obtained by incentivizing attendance, including by providing small research funds.

We must also transform institutional incentives to encourage and reward diverse forms of collaboration in climate change, sustainability, and resilience-related research. For all its proven value in fostering original, solutions-oriented research, collaboration does not always find supportive conditions, and in some fields, such as within the arts and humanities, individualized research and creative practice tends to receive the highest reward. Collaborative and justice-oriented research entails a necessary level of intellectual and professional risk, and it requires time and energy. Potential responses to these problems include the targeted use of incentives such as scaling up course releases, providing seed funding to initiate and sustain collaboration, and a CAP/EVC/VPAA taskforce on amending merit review criteria to reward justice-oriented collaborative and diverse work. Some of these incentives should be further targeted towards junior faculty and faculty and graduate students from underrepresented groups who are currently leading the campus in much of this justice-centered, solutions-oriented work. Additional actions that will support this outcome include enhancing administrative support structures for grant writing and management across divisions, and staff training or new staff hires specific to writing and managing research proposals that work across disciplines and ways of knowing. Creating these support structures will be necessary to ensure the labor of managing an expansion of extramural research funding is not placed on faculty and graduate students, including those from underrepresented groups. Leveraging the Office of Research to prioritize coordinating this expansion would also support this outcome.

Collaborative and diverse solutions-oriented research can also be enhanced by building on and expanding existing structures for community engaged research and partnerships. UCSC should leverage

existing expertise on campus such as the Campus + Community center to develop training resources in community engaged research, including for STEM researchers, create mechanisms for participant compensation, and set aside project development funding to enable UCSC researchers to meaningfully engage community partners, including for example in the design of adaptation planning. UCSC should also create a residential activist and community scholar program, which would host activists at colleges as well as institutes and/or centers such as the Institute for Social Transformation, the UCSC Center on Coastal Climate Resilience, the Institute of the Arts & Sciences, and others to enable them to reflect on their experience and collaborate on research with faculty and students. Such a program could also facilitate the involvement of artists in science-focused projects, yet another avenue for enriched and justice-driven community engagement.

Incentivizing community-based and epistemologically diverse research will also help UCSC to ameliorate harms that result from the extractive nature of knowledge production. Climate research and action that advances justice, and does not reinforce injustice, is predicated on eliminating these harms. UCSC should ensure that its research provides multiple forms of benefits to research participants and partners, thereby enhancing UCSC's relations with its community partners, including by engaging in Reciprocity Agreements with research participants to ensure their community needs are met. Actions that will support this strategy include catalyzing new discussion and training on research ethics and diverse approaches to climate research.

A new funded Center for Climate Justice, with focal areas in, among others, Indigenous climate justice and climate resilience would play a pivotal role in celebrating and rewarding the diversity in research that is necessary to effectively address climate change. It would further place UCSC at the forefront of innovative and impactful social justice-oriented research on climate change, sustainability and resilience. The new Center must have a structure, staff composition, and mission specifically tailored towards advancing climate justice. This would require that the Center for Climate Justice is established as a new entity that is separate from the Center for Coastal Climate Resilience, which has a different mission, although the two centers may collaborate to maximize their impact. The precise name of this new Center should be jointly determined with the Amah Mutsun Tribal Band in recognition of their role as stewards of the land UCSC occupies. Moreover the Center's inclusion of Indigenous studies should be defined and designed in collaboration with any new center for Indigenous studies, currently being discussed by the Indigenous Faculty Network (IFN). Interns from the Chancellor's Undergraduate Internship Program (CIUP) should support the Center annually, including Indigenous interns.

The campus community identified several other strategies that should also be considered to achieve this goal. These include: alter UCSC's divisional structure for example by creating a School of the Environment; leverage the new Center for Coastal Climate Resilience to spearhead research collaboration; reinstating positions for professors-of-practice across divisions and disciplines, including in climate justice, Indigenous studies, and climate science; expand faculty expertise related to climate justice for example by conducting an interdisciplinary cluster hire focused on climate justice; and incentivize graduate student-faculty research collaboration and mentorship by creating new GSR positions particularly in under-funded divisions.

Challenges and strategies to overcome them:

A primary barrier to securing this goal will be the funding required to establish and sustain the collaborative infrastructure required to support this goal. Securing funding for a physical meeting space organized around collaborative climate research is a long-term endeavor, and we suggest pursuing this as a medium term fundraising goal while adopting a creative short-term approach to identifying existing, underutilized building stock on campus, such as through the UCSC Monterey Bay Education, Science and Technology Center (MBEST), that could be repurposed to serve this function. We see the potential for synergistic effects related to augmenting the diversity of collaborative research through investment in a Climate Justice cluster hire within the campus' initiative to diversify the faculty by making 100 faculty hires over the next 10 years. We also recommend funds be prioritized for an interdisciplinary center on Indigenous climate justice.

Goal 7: With an ethos of reciprocity and respect, forge relationships with Indigenous peoples/organizations that enable the co-production of knowledge and action plans towards climate justice.

Metrics

- Adopt a formal agreement between UCSC and the Amah Mutsun Tribal Band (AMTB) that lays out commitments for collaboration, sharing of space/information/resources, and consultation. Fall 2023
- Engage/create Cultural Conservation Easements that will provide access to traditional lands for the Amah Mutsun to steward using Indigenous ecological practices and science that have been shown, for example, to advance biodiversity conservation and mitigate wildfire.
- In close consultation with the Indigenous Faculty Network (IFN), conduct a search for a senior faculty member with expertise in CA Indigenous studies. Including as related to Indigenous climate justice, resilience, and /or ecological knowledge.
- Undertake a cluster hire for new research faculty with a focus on local ecological knowledge in Indigenous studies in the next 3 years.
- Strengthen scholarship on CA Indigenous Studies, including as related to indigenous climate justice and resilience, through, for example, a cluster hire, departmental status for Indigenous studies, and/or a new center for indigenous studies.
- Increase curricular content across campus to increase visibility of Indigenous scholars and culture, through, for example, a cluster hire, departmental status for Indigenous studies, and/or a new center for indigenous studies.
- Create a focal area on Indigenous climate justice within the proposed new Center for Climate Justice (see SPCC Goal #1), ensure collaboration with any new center Indigenous studies in designing this focal area, and involve the AMTB in the naming of the new center for climate justice. Spring 2024
- Increase supports for IFN engagement on all of these issues

Narrative

Background and Rationale:

Mainstream approaches to climate change response have been focused on greening our economy and technological responses that merely reproduce the social problems that make climate change such an intractable problem to solve and without addressing ongoing and historical causes of harm. “Colonialism is not a historical event, but an ongoing set of relations that still characterize the common sense of professional science” (Liboiron, 2021). Such colonial relations are seen in the mundane workings of the university, manifesting the assumed universal superiority of Western ways of knowing and doing. For generations, research has benefitted from and taken for granted access to Indigenous lands, lives and knowledge. As scientists and scholars, we have inherited these practices and worldviews that have dismissed Indigenous science and ways of knowing as insufficient; that presume the right to collect, extract, control and display items taken from Indigenous lands and bodies without consent (ProPublica, 2023), including within the UC system (Hudetz et.al., 2023); that erase Indigenous relationships to land and non-human relatives through practices such as colonial place names. To address these forms of harm, UCSC must signal its commitment to Indigenous science to begin a reversal of the erasure of Indigenous peoples’ culture and history. This is a commitment towards more just land relations and confronting the dominant knowledge paradigm that presumes entitlement to Indigenous land, life and knowledge (Liboiron, 2021).

As we state in our land acknowledgement, UC Santa Cruz sits on “the unceded territory of the Awaswas-speaking Uypi tribe. The Amah Mutsun Tribal Band (AMTB), comprised of the descendants of indigenous people taken to missions Santa Cruz and San Juan Bautista during Spanish colonization of the Central Coast, is today working hard to restore traditional stewardship practices on these lands and heal from historical trauma.” This statement speaks not only of the genocide of Indigenous peoples, but also their survivance and continued commitment to sustain biocultural care, in recognition of the co-evolved relationships of humans and non-human kin.

Faced with climate disruption, the power and potential of Indigenous ecological stewardship is increasingly recognized for its critical role in protecting the environment, from controlled burns by the AMTB to sustain biodiverse coastal prairies and reduce the risk of uncontrolled wildfires, to the efforts of the Swinomish of NW Washington, who in 2010 were one of the first communities to enact a climate action plan (Anderson, 2005, Cuthrell, 2013, Keeley, 2002). Since then, an additional 50 Native American tribes have followed, ahead of most US communities (Morrison, 2020). Their plans to address climate change are situated in the dynamic intersections between land and sovereignty; the natural environment (which includes humans); institutions; technology (e.g., from GIS to tools to make birch bark canoes); economics (i.e., systems and interactions that prioritize collective wellbeing); and human perception, activity and behavior. Indigenous knowledge systems and relationships with the natural environment demonstrate that there are a multiplicity of ways to care for the planet. Honoring and incorporating this conceptual, ideological, cultural and linguistic diversity opens the possibility for more heterogeneous, nuanced and contextualized efforts towards place-based, justice-centered sustainabilities, and would reflect yet another manner in which UC Santa Cruz exemplifies innovation and social equity.

Centering and elevating these also aligns with UCSC’s commitment to student success as integration of interdisciplinary and transdisciplinary ways of knowing, including Indigenous science, is essential to training the leaders and change makers of tomorrow.

Challenges and strategies to overcome them:

The challenges to achieving this goal are deeply rooted in the history of public land grant universities and the normalization of conducting university business on lands stolen from Indigenous peoples without compensation. In 1862, President Lincoln signed the Morrill Act, which lined state coffers with land-handouts for a national-scale production of colleges and universities. By the 1900s, the federal government had redistributed 10.7 million acres of Indigenous land to 52 land-grant universities, amassing \$22.8 million of endowment funds in principal and unsold landholdings (Lee and Ahtone, 2020), which is equivalent to \$596M today. The University of California leveraged these massive land swaths for real estate brokerage and financing that covered large portions of their annual expenses. Indeed, 150,000 acres of California Indigenous land funded the UC system, for which Indigenous people received no compensation, and from which the UC system continues to accumulate wealth. The earnings from land sales were invested in stocks that became an everlasting endowment for each university.

This Indigenous history has been largely invisibilized through business-as-usual practices across most public universities. In a campus-wide survey by the People of Color Sustainability Collective in 2022, only 27% of undergraduates report learning about American Indian and Indigenous understandings of environmental sustainability, reflective of a pervasive erasure of Indigenous peoples in education and society (Davidow, 2019). However, the UCSC Strategic Planning process presents an opportunity for our campus to lead in centering Indigenous peoples, elevating their voices, and importantly recognizing the contributions their scientific practices can make to thinking differently and more effectively about climate change, sustainability and resilience.

Conclusion

The 2023 Strategic Planning Committee for Sustainability, Climate Change and Resilience has assembled a set of recommendations that are both strategic and actionable with the appropriate amount of resource investment by UCSC. Climate change is arguably the most defining issue of our time, and how our society addresses it will impact both social and environmental ecosystems for generations to come. At an institutional level, elevating climate change, sustainability and resilience as one of the top 5 issues for UCSC's next 10-Year Strategic Plan, with justice at the center, is a terrific step in the right direction. This will help UCSC to continue demonstrating leadership in sustainability in higher education, and position us to become the institutional leader on issues of climate justice that cut across our teaching, research and operations. This step is just the beginning. If UCSC is to effectively play its part in addressing climate change and increasing the sustainability and resilience of our campus community across all areas of our operations, research and teaching, it will be critical to invest an appropriate amount of resources to match the enormous scale of the problem.

Appendix 1

Items included:

1. Summary of stakeholder meetings, (Table 1)
2. Association for the Advancement of Sustainability in Higher Education's (AASHE) Sustainability, Tracking, Assessment, and Rating System (STARS) [Presentation](#)
3. SPCC Engagement [Presentation](#)
4. Peer Benchmarking [Presentation](#)
5. [Jam Template](#)
6. SPCC and Research Joint Town Hall [Template](#)
7. Focus Group Engagement [Template](#)
8. SPCC Committee Engagement [Jam](#) Dec. 2022

Table 1 Summary of SPCC Engagements

	Targeted group(s) / individual(s)	Number of Participants	Engagement Type	Engagement Date(s)
1	Students	15	Tabling	11/19/23
2	Campus leaders - deans, provosts, directors	24	Focus Group	11/29, 12/1, 12/9
3	All, campus community	66	Town Hall	12/13
4	ENVS144 and ESCI160	110	Class survey	12/20
5	SPCC, graduate students	30	Zoom discussion	1/6/23
6	SPCC	30	Workshop	12/8
7	Mike Beck, Center for Coastal Climate Resilience Director	1	Discussion	12/13
8	Key operations partners	8	Focus Group	1/12
9	ENVS EES, E&PS	70	Workshop	1/23
10	CAPS director, SoCSC members, faculty	15	Discussion	1/25
11	PoCSC	5	Focus Group	2/1
12	Graduate Students	7	Workshop	2/23
13	ENVS 25	350	Class survey, discussion	2/15
14	Campus Climate Coalition	8	Workshop, discussion	2/16
15	Indigenous faculty/staff	10	Discussion	3/9
16	Center for Coastal Climate Resilience Board of Advisors	10	Discussion	3/6
17	Institute for Social Transformation	2	Feedback on draft goals	3/10

	Targeted group(s) / individual(s)	Number of Participants	Engagement Type	Engagement Date(s)
18	Science and Justice Research Center	2	Feedback on draft goals	3/10
19	Arts Division	3	Feedback on draft goals	3/10
20	Teaching and Pedagogy leaders	3	Feedback on draft goals	3/10
21	Center for Coastal Climate Resilience Board of Advisors	9	Feedback on draft goals	3/10
Total:		778		

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