UC RIVERSIDE

Academic Senate

February 8, 2024

To: Sang-Hee Lee, Chair
Riverside Division

From: Matthew Barth, Chair
Sustainability, the Environment and Climate Crisis Ad Hoc Committee (SECC)

Re: Sustainability, the Environment and Climate Crisis Ad Hoc Committee Report

Please find attached the final report from SECC.

Sustainability, the Environment and Climate Crisis (SECC) Ad Hoc Committee Report

January 31st, 2024

1. Introduction

In 2021, the Systemwide Academic Senate encouraged all UC campuses to create a new divisional academic senate committee focusing on the climate crisis, with the goal of having each campus seek ways to expand existing campus sustainability efforts to push toward decarbonization, to encourage educational innovation on climate subjects, and to transform relevant campus practices. At the time, UCR already had a well-organized Sustainability Committee, consisting of a balanced mix of students, staff, and faculty that addressed sustainability issues on various academic components, the operational side of the UCR campus, as well as planning and budget. This committee is at the heart of UCR's Office of Sustainability, described in greater detail in Section 2.

In response, UCR's Academic Senate division chair Jason Stajich formed an ad hoc committee in 2022, in order to explore how a sustainability-oriented academic senate committee could complement UCR's existing sustainability organizational structure. This "Sustainability, the Environment, and Climate Crisis" ad hoc committee (referred to here on out as the SECC Committee) has the following goals:

1) Work with the existing UCR Office of Sustainability and propose a scope of charge for a permanent standing committee addressing the climate crisis;
2) Describe how this standing committee would interface and complement the existing UCR Sustainability Committee;
3) Identify and articulate areas of Senate consultation on sustainability topics, in order to help identify how this committee can give voice to faculty in areas that are not currently addressed;
4) Describe how this committee would interface on building/construction consultation, in concert with the Physical Resource Planning standing senate committee; and
5) Help participate in how sustainability topics can be integrated into UCR's curriculum and course offerings.

This ad-hoc SECC committee has met on a regular basis since the Fall of 2022 and is providing this report that addresses three main deliverables:

1) We provide a recommendation for the establishment of a standing SECC committee in the Riverside Divisional Senate, with a specific charge (described in Section 1.1);
2) We address how the Senate sustainability-related activities can be best coordinated with the campus' existing Sustainability Committee, and how the SECC committee can integrate sustainability goals throughout Senate committees (described in Section 2.3); and
3) We provide a roadmap for UCR's Sustainability Academic Programs and Curriculum, Research, and Infrastructure (described in Section 3), referred to as R'Earth.

1.1. Establishment of a Standing SECC Committee:

After an extensive analysis, the ad hoc SECC committee recommends that the SECC committee become a **standing Academic Senate committee**. The proposed bylaw change for this action is provided in Appendix A. The stated purpose and effect of this standing SECC committee is to be as follows:

> *The standing SECC committee will: 1) advise the Division on all matters relating to UC environmental sustainability policies and goals; 2) review UCR's environmental sustainability practices and associated operations (in coordination with UCR's Sustainability Committee) and recommend ways to improve; 3) provide oversight and coordination of academic environmental sustainability programs and associated curriculum; and 4) interface with other Division standing committees on topics related to environmental sustainability.*

The justification for this permanent committee is as follows:

> *In 2021, the Systemwide Academic Senate encouraged all UC campuses to create a new Academic Senate committee focusing on the climate crisis, with the goal of having each campus seek ways to expand existing campus sustainability efforts to push toward decarbonization, to encourage educational innovation on climate subjects, and to transform relevant campus practices. It will be beneficial to develop UCR's committee, taking lessons from the committees formed at Systemwide and the other UC campuses. While UCR already has a campus-wide Sustainability Committee that covers UCR's broad sustainability goals (reporting to the Provost and VCPB), the SECC committee will formalize the Academic Senate's role in advising the Chancellor on matters of environmental sustainability.*

1.2. Coordination with UCR's Sustainability Committee and Interface with other AS Committees:

On an on-going basis, the standing SECC committee will review UCR's environmental sustainability practices and associated operations (in coordination with UCR's Sustainability Committee) and recommend ways to make improvements. Further, this SECC committee will interface with other Division standing committees on topics related to sustainability, including, but not limited to committees on Physical Resource Planning, Courses, Education Policy, Research, and Planning and Budget. Further details are provided in Section 2.

1.3. Roadmap for UCR's Sustainability Programs and Curriculum

As part of our efforts, we provide a general roadmap of the various sustainability-related activities on the UCR campus, with the goal of unifying sustainability programs and practices under a new campus-wide initiative we refer to as *R'Earth*. This roadmap not only addresses academic programs and curriculum, but other aspects of UCR's fifth pillar of its current Strategic Plan. The proposed roadmap is outlined in Section 3 of this report.

2. Background

2.1. Brief History of UCR's Organized Sustainability Efforts

The University of California system as a whole has an early history in addressing environmental sustainability, crossing multiple dimensions. As one of its earliest actions, all ten UC chancellors signed the American College and Universities Presidents' Climate Commitment in 2007, requiring an assessment of institutional greenhouse gas emissions and a long-term plan to address those emissions. In November of 2013, then newly-appointed UC President Janet Napolitano used her first address to the UC Regents, to announce a goal to achieve carbon neutrality for all direct (scope 1) and indirect (scope 2) sources by 2025, referred to commonly as UC's Carbon Neutrality Initiative (CNI). This CNI capitalized on UC's historic standing as a sustainability leader. As part of the CNI effort, President Napolitano formed a Global Climate Leadership Council (GCLC) in 2014 to advise UC on achieving the ambitious goal of achieving carbon neutrality by 2025 while also providing guidance for furthering its other longstanding sustainability goals. The GCLC also provides guidance on integrating the carbon neutrality initiative and other sustainability goals into UC's teaching, research and public service mission. The GCLC is composed of scientists, administrators, students and experts from inside and outside UC and is engaging the entire university community in its effort to seek out the best practices, policies and technology to achieve carbon neutrality and to advance teaching and research in climate change and sustainability.

UCR's first efforts in organized sustainability began in November 2010, when a new "Office of Sustainability" was created by Associate Vice Chancellor and Campus Architect Don Caskey with approval of Chancellor Timothy White. One of the first actions was to hire a Sustainability Coordinator, and in 2011 Dr. John Cook was hired to fill that position. Cook was promoted to Director of Sustainability in 2012, in response to the expanded scope of his duties that required engagement with planning and budget, facilities management, research and curriculum, and outreach activities on campus, in the community and UC system-wide. During his six years as the campus Chief Sustainability Officer, Cook was instrumental in institutionalizing the sustainability practices and programming that "put UCR on the map" as a "sustainable" campus. Under Cook's leadership, UCR's sustainability status rose in the "green" ranking systems that prospective students and faculty consider in their college and employment decisions. The Office of Sustainability achieved a Gold Rating from the Association for the Advancement of Sustainability in Higher Education (AASHE) Sustainability Tracking and Rating System (STARS) in 2015-16. In that same academic year, UCR made the Princeton Review's Greenest College list for the 7th time, and UCR achieved its highest ranking ever in the Sierra Club's Cool School list, significantly improving its rank in comparison to the previous year and placing better than UCLA, UCSB, UCB and UCM.

Early on, UCR's Office of Sustainability was consistently successful in securing funding for campus sustainability efforts. As with other UC campuses, much of its work at the time focused on energy efficiency and renewable energy procurement (both on-campus and UCOP-procured utility-scale solar farms).

Recognizing the importance of student engagement for campus sustainability, UCR's Office of Sustainability also made support for student research and engagement projects central to the Office of Sustainability's mission. The office worked with student organizations to secure funding and develop leadership opportunities. Similar engagement efforts were carried out with a number of UCR's faculty.

Suddenly, in December 2016, UCR's Office of Sustainability was "restructured." The office was quickly downsized from 4 full time staff to one part time appointment, put under UCR's Capital Assets office, and John Cook was subsequently laid off. In 2017, the Academic Senate responded to the uproar among faculty, staff, and students generated by this abrupt series of changes by creating an ad hoc Sustainability Committee to investigate this sudden restructuring, and to propose a new structure for the Office of Sustainability moving forward. Following a year-long investigation, the committee wrote an extensive report to the chair of the Academic Senate. A key outcome of this report was the establishment of a new sustainability structure supported by UCR's Provost and Vice Chancellor for Budget and Planning. This new structure highlighted a "three-pillar" approach towards sustainability, that included a focus on 1) academic sustainability; 2) facility services (i.e., campus operations), and 3) planning and budget. This approach was adapted by the provost and VC Budget & planning in 2018, leading to UCR's current Office of Sustainability structure, shown in Figure 1 below, which remains in place today. With this structure, all three pillars have been addressed with appropriate representation on UCR's Sustainability Committee, the heart of UCR's sustainability structure. The UCR Sustainability Committee is composed of faculty, staff, and student representatives and advises the Provost and the Vice Chancellor of Planning and Budget on sustainability issues related to academics, campus operations, and long-term planning. The committee meets monthly to review UCR's sustainability status and to advise UCR leadership on 1) overall campus efforts to achieve UCOP policies related to sustainability goals and targets, 2) creation of UCR policies which achieve or exceed UCOP sustainability goals, 3) campus strategies, plans, programs and actions which advance UCR Sustainability goals, 4) potential faculty and student research projects that can help achieve UCR sustainability goals, and 5) potential instructional curriculum that can help educate students, staff, and faculty about different elements of sustainability. Issues addressed by the Sustainability Committee include energy and climate protection, built environments, food production and sourcing, ethical material procurement, recycling and waste management, transportation optimization, and water consumption.

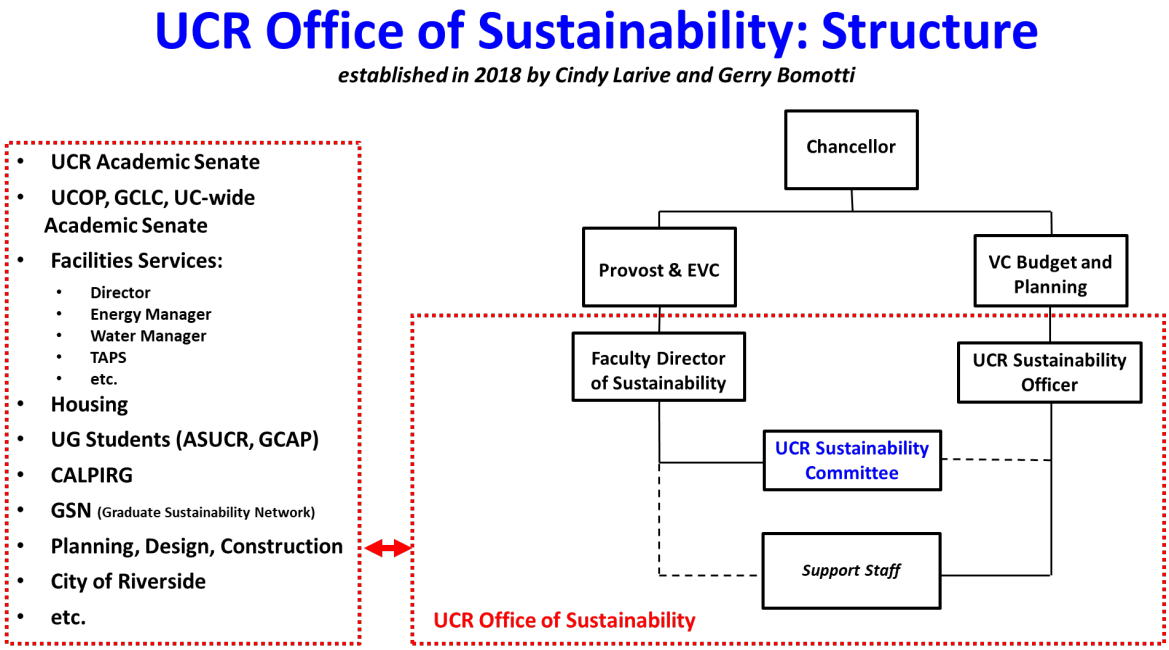

Figure 1: UCR's Current Structure for the Office of Sustainability

2.2. Moving Towards Decarbonization

Since establishing the CNI in 2013, the UC system as a whole has been making modest progress towards carbon neutrality. As the strict CNI deadline approached and all UC campuses were still using their central gas plants, UCOP outlined a strategy to rely on both carbon offsets and procurement of renewable natural gas (RNG, or biogas) to achieve "net-zero" emissions. As the offsets program and RNG developed and expanded, more concerns were raised about both of these approaches. Carbon offsets have been notoriously difficult to track and ensure permanence and "additionality" (the actions would not have occurred without the offset market), and ultimately delay strategies to decarbonize in-house processes. Renewable natural gas is still methane, a powerful greenhouse gas that has been found recently to leak at higher rates than previously estimated. Furthermore, RNG procurement is not scalable to address usage in the state, as only ~15% of natural gas consumption in buildings can be replaced by RNG produced from all available biological feedstock in the state (CA Energy Commission Report). As the Cal State decarbonization plan comments on the UCOP RNG strategy "A solution that is not scalable beyond first-movers provides little long-term benefit if it simply results in dividing up the same resource between more parties."

Given the growing concerns about the UC's approach to decarbonization, in 2022 a systemwide Memorial overwhelmingly passed (84.6% of 3,649 voting academic senate members voted in favor) petitioning "... the Regents for investments in UC's infrastructure that will reduce on-campus fossil fuel combustion by at least 60% of current levels by 2030 and by 95% of current levels by 2035." In response, President Drake convened a Pathways to Fossil Free UC Task Force to develop a timeline and recommendations for eliminating fossil fuel combustion on campuses. The result is a state-funded Decarbonization Study of all campuses, to reduce scope 1 (direct, on-campus) emissions 90% from a 2019 baseline by 2045, with intermediate target dates. It is to be noted that this Task Force is a subset of the UC Office of the President's Global Climate Leadership Council (GCLC), on which every campus has a representative (currently Matt Barth and Caroline Hung represent UCR). The GCLC has endorsed this decarbonization study and is asking each campus to set its own intermediate target dates. UCR is being asked to determine their target dates by June 30th, 2024.

In parallel, the systemwide Academic Senate recommended that each campus create a committee to address the climate crisis and other related environmental issues, with each committee reporting to a systemwide committee on the climate crisis. As stated in Section 1, UCR's Academic Senate division chair Jason Stajich formed the SECC ad hoc committee in 2022, in order to explore how a sustainability-oriented academic senate committee could complement UCR's existing sustainability organizational structure.

2.3. Enhancing UCR's Sustainability Structure

After an extensive analysis, the ad hoc SECC committee felt that establishing a standing SECC Academic Senate committee would enhance UCR's overall sustainability efforts. As such, the proposed standing Academic Senate SECC would interface with the existing Sustainability Committee and provide stronger Senate oversight of campus sustainability efforts, in line with the principles of shared governance of UCR. The key goals of this standing SECC committee would be to 1) advise UCR's academic senate on all matters relating to UC environmental sustainability policies and goals; 2) review UCR's environmental sustainability practices and associated operations (in coordination with UCR's Sustainability Committee) and recommend ways to improve; 3) provide oversight and coordination of academic environmental

sustainability programs and associated curriculum; and 4) interface with other Division standing committees on topics related to environmental sustainability.

Specifically, the standing SECC committee will interface with other academic senate standing committees on topics related to sustainability. These other committees include (but are not limited to):

- *Physical Resource Planning*, dealing with issues within UCR's Long Range Development Plan, including building design and operations;
- *Courses*, in particular on determining which courses are sustainability focused, and encourage the addition of new courses;
- *Education Policy*, in exploring how students can enhance their education from a sustainability perspective;
- *Research*, in tracking, coordinating, and enhancing sustainability-related research; and
- *Planning and Budget*, in helping promote sustainability priorities.

Further, a standing SECC committee would continue to develop and follow a *roadmap* for UCR's sustainability programs and curriculum, described in the next section.

3. Roadmap for UCR's Sustainability Programs and Curriculum: R'Earth Vision

In recent years, universities across the country have been developing new structures to highlight and center responses to the climate crisis and commitment to sustainability. Changes range from founding new schools and colleges (e.g., Arizona State University's Sustainability School, Stanford Doerr School of Sustainability) to unifying existing programs under campus-wide institutes (e.g. Georgetown Earth Commons). These new initiatives position universities as leaders in integrating sustainability into higher education and training the next generation in responses to the climate crisis. Likewise, the ad hoc SECC committee recognizes that there is a need at UCR to organize sustainability research, teaching and engagement, and operations under a novel structure that enables inter-college and inter-departmental cooperation as well as integration of public and student engagement activities, and operations to highlight UCR's existing strengths and build capacity for new sustainability programs. To that end, we recommend the establishment of *R'Earth*, a new campus-wide structure for integrating sustainability activities and initiatives campus-wide.

As the only research intensive university in Inland Southern California, UCR is well-positioned for leadership in sustainability - recently exemplified by the creation of OASIS, (Opportunity to Advance Sustainability Innovation and Social Inclusion) and UCR taking on the new coordinator and fiscal sponsor role for ISC3 (Inland Southern California Climate Collaborative). With a large, growing, increasingly diverse population, Inland Southern California plays an important role in the state's future. It is also ground zero for the state's environmental challenges, including concerns about air quality, environmental justice, and pollution as well as an increasingly warm climate with many very hot days and reliance on declining imported water supplies. UCR has a strong history of both basic and applied research in these topics, with a legacy of groundbreaking work in air quality and agricultural research and global change. However, UCR has struggled to articulate its position at the crossroads of social and environmental issues in the state due to decades of underinvestment. We envision raising UCR's prominence as leader in sustainability

education, research and outreach by uniting sustainability efforts under one campus umbrella, R'Earth. In addition to raising the profile of existing research excellence, we propose to innovate in environmental coursework through new interdisciplinary programs and connections with the local community. Moreover, we hope to link both research and academic programs to campus sustainability initiatives, making our campus a living laboratory for sustainability and climate resilience in the region. As such, we propose to submit the following memorial, with approval from academic senate membership, to the UC Regents: "Recognizing the unique position of UC Riverside at the crossroads of environmental justice issues in the 21st century, we call for the formation of R'Earth, an interdisciplinary research and educational effort."

The R'Earth structure will build on current efforts in our sustainability related academic programs & curriculum, our sustainability research, and our long-term sustainability infrastructure. These are briefly described below.

3.1. Sustainability Academic Programs and Curriculum

UC President Michael Drake identified "Leading on Climate Change" as a top priority for the University of California in the Fall of 2022. Earlier that year, a UC Academic Senate Memorial Vote likewise expressed strong support for climate and sustainability actions relating to reducing carbon emissions (see Section 2). In 2023, UCR Provost Elizabeth Watkins introduced a "Sustainability Pillar" to the campus strategic plan. These system-wide and campus commitments to sustainability more broadly reflect AASHE STARS curriculum and research sections. AASHE STARS is intended to be a transparent, self-reporting framework for colleges and universities to measure their sustainability performance.

Based on UCR's last AASHE STARS assessment, UCR achieved 96 percent of the points available for sustainability-related research in 2021. However, the campus earned only half of those available for "curriculum," which includes: sustainability courses, learning outcomes, academic programs, sustainability literacy assessment, incentives for developing sustainability courses, and use of the campus as a living laboratory. Even though UCR has a number of established Sustainability Academic Programs, UCR's low score in the AASHE STARS curriculum section provides a basis for improvement around developing courses, programs, and assessments in sustainability academics that has, notably, been underscored at the system and campus levels. Specifically, President Drake established a goal of Achieving a score of 36 out of 40 points; Provost Watkin's vision for sustainability at UCR includes a commitment to increase the campus curriculum score pursuant to achieving a Platinum ranking by 2030.

UCR is home to 11 undergraduate and several graduate programs related to sustainability across three colleges and two schools. As of 2021 (our most recent AASHE STARS report) faculty across campus offer well over 120 courses on sustainability. One course - Bending the Curve (BtC), inspired by *Bending the Curve: 10 Scalable Solutions*, a 2015 report by 50 interdisciplinary UC researchers is offered in Bourns College of Engineering, CNAS, and the School of Public Policy, with plans to extend that course offering to CHASS. Despite these accomplishments in academic programming in sustainability, UCR lags behind all but one of our UC sister campuses (UCLA), as noted in the table below. More significantly, the three UC campuses at AASHE STARS's Platinum ranking (Irvine, Berkeley, and Merced) earned, at least, 36 out of 40 points for curriculum.

CAMPUS	YEAR	AASHE STARS OVERALL SCORE	ACADEMIC SCORE	RANKING
Irvine	2021	88.80	38/40	Platinum
Berkeley	2021	85.72	36.31/40	Platinum
Merced	2022	85.50	36/40	Platinum
Davis	2023	79.54	31.95/40	Gold
Santa Barbara	2021	77.90	23.11/40	Gold
Santa Cruz	2022	77.43	31.90/40	Gold
San Diego	2021	71.74	24.53/40	Gold
Riverside	2021	70.1	20.18/40	Gold
Los Angeles	2020	67.87	Incomplete	Expired

Systemwide comparison of overall and curriculum scores per latest AASHE STARS reports.

Because UCR has achieved all of the points available for academic "programs," "immersive experiences," "incentives for developing courses," and "campus as a living laboratory," room for improvement exists in the following curriculum categories:

1. Academic Courses (current score 5.1/14)
2. Learning Outcomes (current score 1.08/8)
3. Sustainability Literacy Assessment (current score 0/4)

The campus is making strides in all of these areas. First, a number of units on campus are in the process of establishing new undergraduate academic programs in sustainability. Specifically, the popular Sustainability Studies BS major/minor programs will be expanded in new Environmental Studies BA major/minor programs expected to be available to students in fall '24, and transitioned to the Department of Society, Environment, and Health Equity (SEHE) in CHASS. SEHE will also administer new Global and Community Health BA major/minor programs as of fall '24. In addition, an interdisciplinary group of faculty across campus have drafted a Sustainability Studies minor based on the BtC course; more recently, faculty have come together to discuss the possibility of a cross-campus Climate Studies minor. Ideally, these minors would be easily integrated into any UCR student's major academic plan.

New programming is also underway at the graduate level. Faculty from the Environmental and Dynamics (EDGE) Institute within CNAS have been developing a proposal for a new interdepartmental Masters of Science in Sustainability and Climate Resilience. This program will offer an interdisciplinary 1-yr course-based Masters program to prepare graduates for science-based sustainability careers in the public and

private sectors and will build on expertise in the physical and biotic basis of climate change in the Departments of Earth and Planetary Sciences, Environmental Sciences, and Evolution, Ecology and Organismal Biology. It is expected that this new Masters degree will be available in Spring 2025. In addition, the Bourns College of Engineering expanded its Masters on-line program, creating a new on-line master option in Mobility Engineering. This Mobility Engineering degree focuses on sustainable transportation, combining conventional and emerging areas of automotive and transportation engineering. Coursework is designed to enhance knowledge of internal combustion engines, fuels, emissions, connected and intelligent transportation systems, shared mobility, autonomous vehicles, and electric vehicles.

UC Riverside's Extension program (UNEX) has also created certificate coursework related to sustainability. As an example, in 2023 a new certificate program was created in Sustainable Transportation Solutions and Community Impacts. This program is targeted to community members who want to gain an introduction to sustainable transportation, with a focus on the movement of both passengers and goods. Of particular note, it examines a variety of sustainable transportation solutions and how it will impact the local community. UNEX has plans to expand their sustainability-related certificate programs in the coming years.

In line with the R'Earth effort, the Sustainability Office staff is already updating and broadening the sustainability keywords list to incorporate the Sustainable Development Goals (SDGs), which has become a basis for understanding sustainability on U.S. campuses and within government institutions. The current list of courses was developed via a keyword search of course titles and descriptions to identify courses that *focus* on sustainability (or one of its constituent elements - environmental sciences, environmental/social policy and action, economics), or *include* sustainability. Use of a more comprehensive list of keywords derived from the 17 United Nations SDGs should significantly increase the number of UCR courses that count toward the AASHE STARS academic courses score. Additionally, as part of the R'Earth plans, there are discussions of adding a "sustainability content" check box on the New Course Request form, like the one that exists in the extramural grant process, to improve the identification of sustainability courses. Such a check box might also encourage faculty to consider developing sustainability courses. Regardless of how we ultimately decide is the best way to identify and count sustainability courses, we are working with the Registrar to "tag" these courses in Banner so that students who are interested in sustainability and seek to incorporate sustainability-focused or inclusive courses in their academic major plans can find them more easily.

Second, in cooperation with the Provost, R'Earth would explore adding a "core competency" in sustainability to serve as a campus-wide learning outcome that is regularly assessed. This new core competency might also encourage faculty to consider developing program and/or course-specific sustainability learning outcomes. Following UCSD, R'Earth would consider incorporating a General Education (GE) requirement on sustainability when the Academic Senate opts to move forward with revising the campus GEs, a project that has been stalled for a number of years.

Finally, with the support of the Provost and the UC GCLC, we are in the process of developing a survey to assess sustainability literacy - initially among students, and later among faculty and staff. We anticipate

developing 10+ questions to be administered on their own or inserted into an existing, regular survey within a year, and plan to report on the results of this assessment as part of the next AASHE STARS reporting cycle in 2025. The questions and assessment strategy are part of a pilot study for implementation systemwide, to be funded by the UC Global Climate Leadership Council (GCLC).

3.2. Sustainability Research

UC Riverside conducts a wide spectrum of research related to sustainability and climate change, spanning nearly all colleges and schools. In addition to individual faculty research activities, there are nearly 30 research centers or institutes related to sustainability (see Table below). In 2021, this excellence in research was recognized in the campus AASHE STARS score of 17.27/18 for research, support for sustainability research, and access to this research.

College	Center/Initiative	Director
Bourns	Center for Environmental Research and Technology (CE-CERT) https://www.cert.ucr.edu/	Don Collins
Bourns	Winston Chung Global Energy Center (WCGEC) https://www.wcgec.ucr.edu/	Reza Abbaschian
Bourns	Center for Robotics and Intelligent Systems (CRIS) https://www.cris.ucr.edu/	Amit Roy Chowdhury
Bourns	Ubiquitous Communication by Light (UC-Light) Center https://www.uclight.ucr.edu/	Albert Wang
Bourns	Energy, Economics and Environment Research Center (E3) https://e3.ucr.edu/	Nanpeng Yu
Bourns	UC-KIMS Center of Innovative Materials for Energy and Environment	Jin Nam
CHASS	California Center for Native Nations (CCNN) https://ccnn.ucr.edu/	Wallace Cleaves
CHASS	Center for Ideas and Society (CIS) https://ideasandsociety.ucr.edu/	Jeanette Kohl/ Dylan Rodríguez
CHASS	UCR Arts https://ucrarts.ucr.edu/	Leigh Gleason
CNAS	California Agriculture and Food Enterprise (CAFÉ) https://cafe.ucr.edu/	Norm Ellstrand
CNAS	Center for Conservation Biology (CCB) https://ccbbirds.org/	Darrel Jenerette
CNAS	Center for Nanoscale Science and Engineering https://nanofab.ucr.edu/	Shane Cybart
CNAS	Environmental Dynamics and GeoEcology Institute (EDGE) https://edge.ucr.edu/	Sandra Kirtland Turner
CNAS	Institute for Integrative Genome Biology (IIGB) https://iigb.ucr.edu/	Katayoon Dehesh
CNAS	Center for Infectious Disease and Vector Research (CIDVR) https://cdvr.ucr.edu/	Karine Le Roch
CNAS	Center for Plant Cell Biology (CEPCEB) https://cepceb.ucr.edu/	Julia Bailey-Serres

CNAS	Center for Invasive Species Research (CISR) https://cisr.ucr.edu/invasive-species	Mark Hoddle
CNAS	Center for Integrative Bee Research https://ciber.ucr.edu/	Boris Baer
CNAS	Plant Transformation Research Center https://ptrc.ucr.edu/	Martha Orozco
CNAS	Microbiome Initiative https://microbiome.ucr.edu/	Quinn McFrederick
CNAS/ UCOP	UCR Natural Reserves https://cnas.ucr.edu/academics/natural-reserves	Kimberley Hammond
CNAS/ UCOP	Agriculture Experiment Station (AES) https://cnas.ucr.edu/resources/agricultural-experiment-station	
SOM	Bridging Regional Ecology and Aerosolized Toxins to Understand Health Effects (BREATHE) https://breathe.ucr.edu/	David Lo
SOM	Center for Healthy Communities (CHC) https://healthycommunities.ucr.edu/	Mark Wolfson Michelle C. Boroughs
SOM	Center for Health Disparities Research (HDR) https://healthdisparities.ucr.edu/do-research-us	David Lo
SPP	Inland Center for Sustainable Development https://icsd.ucr.edu/	Qingfang Wang/ Rick Bishop
SPP	Center for Social Innovation https://socialinnovation.ucr.edu/	Karthick Ramakrishnan
SPP	Blum Initiative on Global and Regional Poverty https://blum.ucr.edu/	David Brady
RED	R'Water/UC Water Security and Sustainability Research Initiative http://ucwater.org/	Hoori Ajami/ Kurt Schwabe

Sustainability-related Research Centers and Initiatives at UCR.

In terms of tracking UCR's sustainability-related research, UCR's Office of Research and Economic Development (RED) introduced a sustainability "check-box" for every research proposal that is submitted from campus in 2012. This self-reporting system simply asks the submitting principal investigator if their research project is related to sustainability research, with the definition of sustainability as follows:

> *"Does this research address, directly or indirectly, any of these topics: living within limits imposed by available resources and the carrying capacity of our environment; examining the interconnections among the economy, social well-being, and the environment; or equitably distributing resources and opportunities for advancement across places and among generations"*

Since 2013, this database of sustainability-related research can be used for a number of purposes, including understanding what percentage of UCR's total research pertains to sustainability, identifying which principal investigators are most active in these fields, and how many research dollars are being focused on sustainability. The data from this database is also important for the AASHE STARS reporting requirements. To date, this database has been utilized by UCR's Office of Sustainability, but it is recommended that this database be maintained and analyzed on a regular basis by members of the proposed standing SECC committee, as part of the R'Earth roadmap.

3.3. OASIS: Opportunity to Advance Sustainability Innovation and Social Inclusion

Over the last decade, there have been several attempts to create an overarching sustainability institute at UC Riverside, where researchers would combine forces, and develop larger sustainability-related research programs. Much of this activity occurred based on interaction between the Bourns College of Engineering and the College of Natural and Agricultural Sciences, focusing on local air quality and related climate change research. Creating such an institute would also interact with the California Air Resources Board (CARB), which recently established their research laboratories directly adjacent to UCR. Several ideas were put forth for developing such an institute, but it wasn't until 2021 when funding was acquired from the state to establish OASIS: Opportunity to Advance Sustainability Innovation and Social Inclusion. OASIS is a public-private partnership led by the University of California Riverside to drive regional economic development through solutions-driven applied research, innovation, entrepreneurship, and workforce development around sustainability, clean technology, and social inclusion. OASIS integrates the numerous regional initiatives led by UCR that leverage its expertise in clean air, community health and health disparities, goods movement, clean energy and energy storage, and sustainable agriculture.

OASIS has a number of key research focus areas, including: 1) Clean Energy & Fuels; 2) Clean Transportation & Infrastructure; 3) Natural Resource Management; 4) Agriculture Technology & Food Security; and 5) Community Health & Health Disparities. OASIS is managed by UCR's Office of Research and Economic Development (RED), which provides internal research funding to support start-up projects in the research areas listed above.

In addition to this loosely-coupled research program, UCR is establishing an OASIS Research Park, anchoring diverse stakeholders collaborating in commercialization of the most promising innovations in clean energy, sustainable transportation, agriculture, community health and health disparities, and around mindful stewardship of natural resources. The OASIS Research Park will encompass research laboratories, incubator facilities, professional educational training, offices for industry and community partners, and community spaces. OASIS partners will create a skilled workforce to fulfill the constantly changing industry needs caused by technological and regulatory changes prioritizing underserved populations. The OASIS Incubator is the innovation engine that will support entrepreneurs interested in the commercialization of sustainable technologies through access to capital, testbed facilities and specialized mentorship. OASIS will create an ecosystem of industry, government, community and academic partners to build consensus towards swift implementation of its vision.

As the OASIS research program continues to grow, there will be a need to track and manage its sustainability-related research. As such, it is recommended that the standing SECC committee work closely with the academic senate Research Committee to formulate an OASIS research roadmap, help seek out large relevant funding opportunities, and serve as proposal reviewers as necessary.

3.4. R'Earth Leadership and Administration

As shown in Figure 1, UCR's sustainability leadership currently includes the Provost and Executive Vice Chancellor (EVC), Vice Chancellor for Planning, Budget, and Administration (VCPBA), senior Sustainability Office staff (Sustainability Officer, Faculty Chair of the Sustainability Committee, and Student Engagement specialist) and faculty, student, staff and administrative members of the Sustainability Committee. Primary responsibility for sustainability rests on the Sustainability Officer, who is expected to manage the Sustainability Office, collaborate directly on all campus operational matters, and manage the

Sustainability Office. The Sustainability Officer reports to the VCPBA and is supported by the Faculty Chair of the Sustainability Committee and the Student Engagement Specialist. The Faculty Chair of Sustainability reports to the Provost and Executive Vice Chancellor (EVC), liaises with the currently ad hoc SECC, and collaborates with faculty and administrators as appropriate and necessary to secure funding, organize events, and supervise postgraduate fellows. The Student Engagement Specialist manages a large student staff and oversees all the student and office activities - both on and off campus, which includes website maintenance, and generalized interpersonal support. These senior staff are supported by a Graduate Student Assistant (GSA) and as many as 20+ student assistants, interns, and fellows. The GSA's responsibilities focus on activities related to AASHE STARS and other sustainability reporting and engagement, especially as it includes graduate students. The contributions of the GSA as well as the numerous undergraduate assistants, interns, and postgraduate fellows are essential to Sustainability Office operations; however, every one of these young people require supervision.

This structure has been effective in advancing sustainability across campus; e.g., by facilitating less resource-intensive operations, improved documentation of sustainability research and teaching, and expanding opportunities for student engagement in activities related to sustainability. Yet, sustainability as a collective, campus-wide endeavor remains uneven. For example, the Sustainability Officer's portfolio emphasizes campus operations, opening the door to their participation in decisions on building design and construction, waste management, and sustainable purchasing, this engagement is not required nor facilitated in any meaningful way. Similarly, the Faculty Chair of Sustainability is charged with facilitating, sharing, and documenting campus initiatives and achievements in sustainability research and teaching, but their quarter-time position barely permits regular attendance at meetings and commitment to a straightforward goal, such as increasing AASHE STARS ranking. Finally, despite the Student Engagement Specialist's remarkable programming and mentoring abilities, engagement in sustainability research and action in the community is chronically unlinked from larger campus opportunities for student participation in "living laboratories."

Due to the absence of a high-level administrative presence, in combination with time constraints on key personnel, the Sustainability Committee has only been minimally engaged or been informed about the rationale for consequential decisions early enough to ensure sustainable campus initiatives. As a result, sustainability on campus has experienced less oversight as well as more angst than necessary. Additionally, there are simply not enough person-hours for high-level oversight and integration that would make the Office of Sustainability more effective.

As such, our vision for R'Earth includes a revised structure for organizing and administering sustainability at UCR, one that would rely on a more purposeful version of the decentralized structure currently in place, with more consistent and focused administrative support. We propose an administrative structure for R'Earth that is headed by a new full-time Vice Provost of Sustainability (VPS) position, who would report to the Provost and EVC and works directly with the VCPBA, the Vice Provost and Dean of the Undergraduate Education, the Vice Provost and Dean of Graduate Education, and the Sustainability Officer to support the campus strategic commitment to sustainability, bringing expertise in organizational leadership and an excellent command of diversity issues as they pertain to higher education. The VPS will lead campus efforts to achieve sustainability goals across campus. Although UC Riverside's commitment to sustainability is more than a decade deep, the VPS is expected to help lead campus-wide efforts that challenge entrenched cultural norms around fossil fuel use and resource-intensive consumption, and

catalyze the campus transition to sustainable operations, academic research and programming, and engagement on campus as well as in the community.

Responsibilities of the proposed VPS are as follows:

- Support the Provost and EVC on developing and moving forward major institutional initiatives and strategic commitments around sustainability, including philanthropic, academic, financial, communication, enrollment, administrative, and operational activities and processes;
- Develop a thorough understanding of the various laws, regulations, and policies related to sustainability in higher education;
- Serve as the lead executive responsible for representing sustainability efforts to internal and external partners; regularly solicit, analyze and synthesize this input for the Provost and EVC and other members of the administrative leadership team;
- Chair the campus Sustainability Committee;
- In collaboration with the Sustainability Officer, engage with campus sustainable operations personnel, chairs and directors of research centers, academic programs, and outreach initiatives focused on sustainability;
- Partner with the Sustainability Office, students, faculty, and staff, executive leaders, the Academic Senate, undergraduate and graduate student government groups, and community partners and leaders in conversations to advance sustainability on campus and throughout Inland Southern California;
- Coordinate with and assist Sustainability Office in its assessment and gap analysis of sustainability efforts by providing guidance on the design and analysis of assessment measures, identification of characteristics of the most successful sustainability efforts system- and nationwide, and how the university currently performs against these ideal approaches;
- Participate in the development of the campus communication plan ensuring sustainability issues of importance to the Provost and EVC are integrated into that plan; Collaborate with campus resources to lead external communications to build partnerships, serve as a spokesperson to a wide range of audiences and collaborate with external partners, including members of the state legislature, donors, alumni, and community – based organizations;
- Define the scope and core characteristics of any cultural changes that may be required to ensure sustainability. Lead this change and conduct an evaluation of the commitment of leadership and resources required for success;
- Develop, publish, and assess metrics and use reporting to advise executive leadership on strengths, weaknesses, and opportunities of programs and units to scale, modify, or close certain programs pursuant to achieving sustainability goals;
- Partner with systemwide leaders and committees (such as GCLC), to support University of California efforts to develop and coordinate sustainability programs and practices across member campuses; and
- Represent UCR at various community, civic, and professional meetings and conferences.

The VPS office would include an administrative assistant and have direct access to analytical and grant writing resources.

Although extending the role of and compensation for the Sustainability Officer and/or Faculty Chair of Sustainability to include some of these responsibilities, a higher-level appointment is necessary to elevate and empower UCR's commitment to sustainability. In the absence of a VPS, the Sustainability Office as currently organized requires an analyst charged with organizing staff and reporting, facilitating meetings and managing communications, in addition to access to a grant writer. An academic analyst in the Sustainability Office would increase efficiency and improve coherence across the office's operational, academic and engagement activities and free up the senior staff to focus on attending and contributing to meetings and managing programs and projects. Additionally, a grant writer would enable the Sustainability Office to increase funding for its own activities and projects as well as those that would incorporate other units on campus. The Sustainability Office successfully secured $140K for a pilot sustainability literacy assessment, but it will be difficult for the staff involved to work on that project *and* develop additional funding streams.

In addition, after surveying the various organizational structures for sustainability across the UC campuses, it was clear that UCR's Sustainability Officer only has a modest position within UCR's administration. Almost every other UC sustainability officer has an Associate Vice Chancellor or Director title. The ad-hoc SECC committee recommends that UCR's sustainability officer be reclassified into an associate vice chancellor title, putting that position on par with facilities management and other similar positions reporting to the Vice Chancellor of Budget and Administration. This re-classification will allow greater sustainability influence on UCR operations, complementing the new VPS position recommended above.

Finally, the ad hoc SECC committee proposes that sustainability efforts are recognized by the academic senate in ways similar to recognition for teaching and service excellence. Sustainability efforts by faculty, staff, and students can be recognized through annual Academic Senate awards, following Senate procedures for awards. Recognition of faculty efforts in the area of sustainability should be considered in the merit and promotions process, similar to the ways mentoring and diversity, equity, and inclusion efforts have been added to The Call in recent years.

4. Closing Summary of Recommendations

In conclusion, the ad hoc SECC committee makes the following recommendations:

- Make the ad hoc SECC committee into a standing SECC committee, with the purpose, effect, and justification provided in Section 1.1 and Appendix A. In the inaugural year of the standing SECC committee creation (July 1, 2024), it is suggested that at least three members of the ad hoc committee be appointed to the Standing Committee.

- Have the new standing SECC committee meet with other standing academic senate committees to establish elements of collaboration. Other committees shall include, but not be limited to, the committees on Physical Resource Planning, Courses, Education Policy, Research, and Planning and Budget.

- Have the new standing SECC committee further develop UCR's Sustainability R'Earth roadmap, adhering to UCR's fifth pillar of its strategic plan (as described in Section 3).

- As described in Section 3, task the new standing SECC committee with establishing R'Earth, a new overarching sustainability umbrella for UCR. Critical to R'Earth is expanding UCR's sustainability footprint with the appointment of a full time Vice Provost of Sustainability, and the re-classification of UCR's Sustainability Officer to an Associate Vice Chancellor title.

- As one of the top priorities, have the new standing SECC committee focus on improving the AASHE STARS rating for UCR 's sustainability curriculum and programs, with the goal of reaching a STARS rating of Platinum.

- Have the new standing SECC committee work closely with the academic senate Research Committee to formulate an OASIS research roadmap, help seek out large relevant funding opportunities, and serve as proposal reviewers as necessary.

APPENDIX A: Standing SECC Committee Bylaw Proposal

Ad Hoc Committee on Sustainability, Environment, and Climate Crisis (SECC)
REPORT TO THE RIVERSIDE DIVISION
(Fall, 2024)

To Be Adopted

Proposed New Standing Committee on Sustainability, Environment and Climate Crisis (SECC)
(Bylaw 8.29)

PRESENT:	**PROPOSED:**
None	8.29 Committee on Sustainability, Environment and Climate Crisis (SECC) 8.29.1 Purpose: The Committee on SECC shall advise the Division on all matters relating to UC environmental sustainability policies and goals. This includes UC's decarbonization plans and research initiatives. 8.29.2 The SECC Committee will also review UCR's environmental sustainability practices and associated operations (in coordination with UCR's Sustainability Committee) and recommend ways to improve; 8.29.3 The SECC committee will provide oversight and coordination of academic environmental sustainability programs (e.g., courses, majors, minors, etc.) and associated curriculum. 8.29.4 The SECC committee will interface with other Division standing committees on topics related to sustainability, including, but not limited to committees on Physical Resource Planning, Courses, Education Policy, Research, and Planning and Budget. 8.29.5. Membership: The SECC committee shall consist of at least six members, including a Chair and at least one member from each college. At least two members must also serve on the UCR Sustainability Committee (the Chair of

this committee plus one other member). The Committee on Committees will make every attempt to include representation from each of the Professional Schools. The Chief Sustainability Officer will serve as an ex officio non-voting member.

Statement of Purpose and Effect:

The ad hoc committee on Sustainability, Environment, and Climate Crisis recommends that a standing senate committee on Sustainability, Environment, and Climate Crisis be established. The standing committee will: 1) advise the Division on all matters relating to UC environmental sustainability policies and goals; 2) review UCR's environmental sustainability practices and associated operations (in coordination with UCR's Sustainability Committee) and recommend ways to improve; 3) provide oversight and coordination of academic environmental sustainability programs and associated curriculum; and 4) interface with other Division standing committees on topics related to environmental sustainability.

Justification:

In 2021, the Systemwide Academic Senate encouraged all UC campuses to create a new academic senate committee focusing on the climate crisis, with the goal of having each campus seek ways to expand existing campus sustainability efforts to push toward decarbonization, to encourage educational innovation on climate subjects, and to transform relevant campus practices. It will be beneficial to develop UC Riverside's committee taking lessons from the committees formed at Systemwide and the other UC campuses. While UCR already has a campus-wide Sustainability Committee that covers UCR's broad sustainability goals (reporting to the Provost and VCPB), the SECC committee will formalize the Academic Senate's role in advising the Chancellor on matters of environmental sustainability.

Section below is for Senate use only

Approved by the Ad Hoc Committee SECC:

The Committee on Rules and Jurisdiction finds the wording to be consistent with the code of the Academic Senate: (leave blank)

Received by Executive Council: (leave blank)