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# Planetary Health Report Card: *University of California, San Francisco*

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*We would like to acknowledge the Ramaytush Ohlone people, who are the traditional custodians of this land. We pay our respects to the Ramaytush Ohlone elders, past, present, and future who call this place, the land that UCSF sits upon, their home. We are proud to continue their tradition of coming together and growing as a community. We thank the Ramaytush Ohlone community for their stewardship and support, and we look forward to strengthening our ties as we continue our relationship of mutual respect and understanding.*

2021-2022 Contributing Team:

- Students: Alison Chang, Valerie Kahkejian, Gunnar Mattson\*
- Faculty Mentors: Katherine Gundling, MD
- \*Primary Contact: Gunnar Mattson, [gunnar.mattson@ucsf.edu](mailto:gunnar.mattson@ucsf.edu)

## Summary of Findings

<b>Overall</b>	<b>B+</b>
<u><b>Curriculum</b></u>	<b>B-</b>
<ul style="list-style-type: none"> <li>• While climate health content is integrated throughout the preclinical core curriculum, these topics are sparse and limited in their depth as it is associated with only two testable learning objectives. However, there are ongoing student and faculty efforts to implement the Climate Health and Sustainability Education (CHASE) curriculum.</li> <li>• We recommend more substantial discussion of and engagement with planetary health (PH) topics, such as those covered by the Inquiry Immersion Mini-Course on climate change. Additionally, clinical training could be improved by providing students with strategies on how to counsel patients affected by climate change.</li> </ul>	
<u><b>Interdisciplinary Research</b></u>	<b>A+</b>
<ul style="list-style-type: none"> <li>• The EaRTH Center, Program for Reproductive Health and the Environment, the Office of Sustainability, and the Center for Climate, Health, and Equity all provide interprofessional opportunities for environmental health engagement in addition to research and funding opportunities.</li> <li>• Similar to the EaRTH Center’s Stakeholder Advisory Board, we encourage the broader SOM to consider institution-wide strategies for incorporating the feedback of community members disproportionately affected by climate change.</li> </ul>	
<u><b>Community Outreach and Advocacy</b></u>	<b>B</b>
<ul style="list-style-type: none"> <li>• Although UCSF has the infrastructure to communicate climate change impacts on human health, neither the University nor the School of Medicine uses their platform to its full potential to advocate for the environmental health of the community.</li> <li>• We recommend more engagement in community partnerships that support Planetary Health initiatives and improved communication to the student body on issues related to planetary health and sustainable healthcare.</li> </ul>	
<u><b>Support for Student-Led Initiatives</b></u>	<b>A-</b>
<ul style="list-style-type: none"> <li>• The administration is supportive of student-led PH initiatives, offering time, funding, and enthusiasm for student work. The Environmental Scholars Program and Carbon Neutrality Initiative fellowship are funded opportunities for students to engage in planetary health at UCSF.</li> <li>• We recommend the institution have a student liaison who represents sustainability interests and serves on a medical school or institutional decision-making council to advocate for curriculum reform and/or sustainability best practices.</li> </ul>	
<u><b>Campus Sustainability</b></u>	<b>B</b>
<ul style="list-style-type: none"> <li>• UCSF has robust waste reduction, water conservation, toxics reduction, sustainable food, green procurement, energy efficiency, green procurement, green labs, and education/engagement efforts.</li> <li>• The university has committed to achieve carbon neutrality by 2025. Despite current efforts, only 62% of total energy consumption is clean and sustainability criteria only require 25% of indicated products and services to be from sustainable sources. Efforts must be substantially expanded to meet carbon neutrality by 2025.</li> </ul>	

# Statement of Purpose

*Planetary health is human health.*

The Planetary Health Alliance describes planetary health as “is a solutions-oriented, transdisciplinary field and social movement focused on analyzing and addressing the impacts of human disruptions to Earth’s natural systems on human health and all life on Earth.” This definition is intentionally broad, intended to encompass the multitude of ways that the environment can affect health, including water scarcity, changing food systems, urbanization, biodiversity shifts, natural disasters, climate change, changing land use and land cover, global pollution, and changing biogeochemical flows. The health of humanity is dependent on our environment and our environment is changing rapidly and in disastrous ways. Although the World Health Organization has called climate change “the greatest threat to global health in the 21st century,” many medical school’s institutional priorities do not reflect the urgency of this danger to human health.

As future health professionals, we must be prepared to address the impacts of human-caused environmental changes on our patients’ health. This preparation is in the hands of the institutions providing our medical training. It is imperative that we hold our institutions accountable for educating medical students about the health impacts of climate change and other anthropogenic environmental changes, generating research to better understand health impacts and solutions, supporting related student initiatives, embracing sustainable practices as much as possible, and engaging with surrounding communities that are most affected by environmental threats. Because climate change and environmental threats disproportionately affect vulnerable populations (for example, communities of color, older adults sensitive to health threats, and individuals in low-resource settings), these issues are inherently ones of equity and justice.

With the purpose of increasing planetary health awareness and accountability among medical schools, we have created a Planetary Health Report Card that medical students internationally can use to grade and compare their home institutions on an annual basis. This medical-student-driven initiative aims to compare medical schools nationally and internationally on the basis of discrete metrics in five main category areas: 1) planetary health curriculum, 2) interdisciplinary research in health and environment, 3) University support for student planetary health initiatives, and 4) community outreach centered on environmental health impacts 5) medical school campus sustainability.

# Definitions & Other Considerations

## Definitions:

- **Planetary Health:** is described by the *Planetary Health Alliance* as “the health of human civilisation and the state of the natural systems on which it depends”. For example, topics such as climate change, declining biodiversity, shortages of arable land and freshwater, and pollution would all fall under the realm of planetary health. Both planetary health and traditional ‘environmental health’ examine the relationship between human health and the external environment, including extreme temperatures, chemicals, vector-borne diseases, etc. Planetary health explicitly concerns itself with the potential health harms associated with human-caused perturbations of natural systems. Therefore, the human health focus of planetary health makes the field well-adapted for the context of medical school education. Throughout this report card, we use the term planetary health to refer to this broad swath of topics, but resources do not need to explicitly include the term “planetary health” to satisfy the metric.
- **Education for Sustainable Healthcare (ESH):** is defined as the process of equipping current and future health professionals with the knowledge, attitudes, skills and capacity to provide environmentally sustainable services through health professional education, thus working to decrease the enormous environmental impact of the healthcare industry. Planetary Health Education is an integral part of this education rather than an end in itself. This is because knowledge on Planetary Health is required to be able to fully understand the necessity of sustainable healthcare as well as being part of the broader knowledge needed to fully protect and promote health. In summary, ESH is covered by the three Priority Learning Outcomes of the Centre of Sustainable Healthcare below, and Planetary Health Education is embraced in the first learning objective and is a fundamental requirement to achieve learning outcomes 2 and 3:
  1. Describe how the environment and human health interact at different levels.
  2. Demonstrate the knowledge and skills needed to improve the environmental sustainability of health systems.
  3. Discuss how the duty of a doctor to protect and promote health is shaped by the dependence of human health on the local and global environment.
- **Medical School vs. Institution:** When “medical school” is specified in the report card, this only refers to curriculum and resources offered by the School of Medicine and does not include offerings from other parts of the university (for example, undergraduate departments (USA), other related departments eg Public Health, Population Health departments). In contrast, when “institution” is specified in the report card, we are referring to the university more broadly. Any resource reasonably accessible by medical students, no matter where in the institution the resource comes from or if it is specifically targeted for medical students, can meet this metric.
- **Environmental history (Metric 19 in curriculum section):** This is a series of questions providers are taught to ask during medical encounters that elicits patients’ exposures and

environmental risk factors. Historically, this has included consideration of exposures like pesticides, asbestos, and lead, though in the modern era shaped by climate change, it can be expanded to include things like wildfire smoke exposure, air pollution and mold after flooding. Key components include place of residence over the lifecourse, occupational history, food and water sources (e.g. meat from industrial feeding operations, regular fishing in contaminated water, access to clean drinking water), and exposure to air pollution.

- **Elective:** The word “elective” refers to an optional course or lecture series that a medical student can opt to take part in but is not a requirement in the core curriculum. Generally, these elective courses take place in the preclinical curriculum but vary by school.
- **Clerkship:** This is a term used in the USA to refer to placements that medical students go on e.g. Pediatrics, General medicine, Psychiatry. In the UK these are referred to as rotations or placements.

#### **Other considerations:**

- If there are more than one “tracks” at your medical school with two different curricula (for example, Harvard Medical School has a Pathways and HST curriculum track), you can choose to fill out a report card for each track, or fill out just one report card and average the scores received by each track in cases where the scores are different (see the 2021 Harvard or Oxford report cards as example).

**Added to our resources this year, the Planetary Health Report Card [Literature Review by Metric](#) collates the evidence behind each of the metrics in the Planetary Health Report Card. It serves as a collection of references for further learning and a resource for those advocating for increased planetary health engagement at their institutions.**

# Planetary Health Curriculum

***Section Overview:*** This section evaluates the integration of relevant planetary health topics into the medical school curriculum. Today's medical students will be on the frontlines of tackling the health effects of climate and other environmental changes. Therefore, it is critical that medical students are trained to understand the health effects of these changes, as well as planetary health issues and principles more broadly. Topics like the changing geography of vector-borne diseases, the health consequences of air pollution, environmental health inequities, and disaster response principles must be part of every medical school's core curriculum.

## Curriculum: General

1. Did your medical school offer elective courses (student selected modules) to engage students in Education for Sustainable Healthcare or Planetary Health in the last year?	
3	Yes, the medical school has offered more than one elective whose primary focus is ESH/planetary health in the past year.
2	Yes, the medical school has offered one elective whose primary focus is ESH/planetary health in the past year.
1	The medical school does not have any electives whose primary focus is ESH/planetary health, but there are one or more electives that include a lecture on planetary health.
0	No, the medical school has not offered any electives on planetary health or electives that include ESH/planetary health topics in the past year.
<p><i>Score explanation: UCSF School of Medicine offers three electives related to climate change and the environment: (1) Health, the Environment, and Non-communicable Disease (2) Environmental Health and Health Professional Activism (3) Climate Change, Health, and Social Justice. A two week course on climate change - Climate Crisis and Health - is one of the options for a required <a href="#">Inquiry Immersion Course</a> for medical and pharmacy students.</i></p>	

## Curriculum: Health Effects of Climate Change

2. Does your medical school curriculum address the relationship between extreme heat, health risks, and climate change?	
3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.

*Score explanation: The Airway, Blood, & Circulation (ABC) 2 block lists the following course objective under testable topics for “Obstructive and Restrictive Lung Diseases:” Understand the impact of climate change on the burden of respiratory disease. Students learned about these health impacts during a lecture on racial disparities in pulmonary disease given by Dr. Aaron Baugh. He described how climate change disproportionately affects people of color and went on to discuss how this compounds existing racial and ethnic disparities in access to care, leading to a situation where the climate, environment, and the healthcare system are contributing to worse outcomes in pulmonary disease in communities of color. Although there is no testable objective related to climate change in the Renal, Endocrine, GI, and Nutrition block, Dr. Leticia Rolon had a slide that discussed the way climate change affects renal disease, with extreme heat and resulting chronic dehydration worsening CKD.*

**3. Does your medical school curriculum address the impacts of extreme weather events on individual health and/or on healthcare systems?**

3	This topic was explored in depth by the core curriculum.
<b>2</b>	<b>This topic was briefly covered in the core curriculum.</b>
1	This topic was covered in elective coursework.
0	This topic was not covered.

*Score explanation: During a lecture on pulmonary diseases as a part of the Airways, Blood, and Circulation (ABC) Block, Dr. Solmaz Manuel covered the interaction of wildfires with asthma distribution in the United States, particularly children living in the East Bay having frequent exposure to wildfire smoke. Although this topic was briefly covered in the core curriculum, the School of Medicine can improve education on this topic by describing how the frequency of extreme weather events relates to health system capacity and how this is changing on a warming planet. The optional Climate Crisis and Health Inquiry mini-course devoted a day of learning to climate change, extreme weather, and wildfires.*

**4. Does your medical school curriculum address the impact of climate change on the changing patterns of infectious diseases?**

<b>3</b>	<b>This topic was explored in depth by the core curriculum.</b>
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.

*Score explanation: In our Pathogens, Host, & Defense (PHD) block, Dr. Peter Chin-Hong included a several minute segment on how climate change is altering the geographical distribution of infectious diseases, including Chikungunya, Dengue, and Zika viruses. This segment was included in a mandatory online video. In addition, one of the course objectives is to “explain how shifts in climate could*

*increase the incidence of vector-borne infectious diseases using Chikungunya, Dengue virus, and Zika virus as exemplars.” This is one of a few examples of climate change appearing in the medical school course objectives. Dr. Chin-Hong similarly presented these topics in a lunchtime talk for the Environmental Health and Health Professional Activism elective.*

**5. Does your medical school curriculum address the respiratory health effects of climate change and air pollution?**

<b>3</b>	<b>This topic was explored in depth by the core curriculum.</b>
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.

*Score explanation: The Airway, Blood, & Circulation (ABC) 2 block lists the following course objective under testable topics for “Obstructive and Restrictive Lung Diseases:” Understand the impact of climate change on the burden of respiratory disease. Students learned about these health impacts during a lecture on racial disparities in pulmonary disease given by Dr. Aaron Baugh. He described how climate change disproportionately affects people of color and went on to discuss how this compounds existing racial and ethnic disparities in access to care, leading to a situation where the climate, environment, and the healthcare system are contributing to worse outcomes in pulmonary disease in communities of color.*

**6. Does your medical school curriculum address the cardiovascular health effects of climate change, including increased heat?**

3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
<b>1</b>	<b>This topic was covered in elective coursework.</b>
0	This topic was not covered.

*Score explanation: Cardiovascular health effects of climate change are addressed during elective courses, especially in regard to climate change and wildfires, however this content is absent from the core curriculum.*

**7. Does your medical school curriculum address the mental health and neuropsychological effects of environmental degradation and climate change?**

3	This topic was explored in depth by the core curriculum.
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2	This topic was briefly covered in the core curriculum.
<b>1</b>	<b>This topic was covered in elective coursework.</b>
0	This topic was not covered.
<p><i>Score explanation: The “Frontiers in Medicine: Climate Change” lecture given by Dr. Tom Newman had one slide on the psychological effects of climate change, but we are considering the Frontiers in Medicine lectures as “elective” since the covered material is not tested and much of the class does not attend. The Inquiry Immersion mini-course on climate change highlighted mechanisms by which human mental health is affected by environmental change, for example through changes in disease vectors, exposure to extreme weather, displacement, and reduced food security. Students explore the topic of mental health and climate change in depth.</i></p>	

<b>8. Does your medical school curriculum address the relationships between health, individual patient food and water security, ecosystem health, and climate change?</b>	
3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
<b>1</b>	<b>This topic was covered in elective coursework.</b>
0	This topic was not covered.
<p><i>Score explanation: The core medical school curriculum does not address the relationship between individual patient food security, ecosystem health, and climate change. However, the Climate Crisis and Health inquiry mini-course dedicates a half-day to the discussion of food security impacts of climate change. Discussions revolve around impacts of anthropogenic CO2 emissions on global human nutrition as well as impacts of droughts, flooding, and climate variability on malnutrition.</i></p>	

<b>9. Does your medical school curriculum address the outsized impact of climate change on marginalized populations such as those with low SES, women, communities of color, Indigenous communities, children, homeless populations, and older adults?</b>	
<b>3</b>	<b>This topic was explored in depth by the core curriculum.</b>
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.
<p><i>Score explanation: In Dr. Tracey Woodruff’s lecture on “Environmental Toxics &amp; Reproductive Toxics” during the Life Stages block, there is a slide that illustrates that cumulative exposures to phthalates are higher in black women than white women. Again, there was discussion in our ABC2 lecture on asthma about the intentional segregation of marginalized groups into areas with higher levels of pollution.</i></p>	

*Although the Class of 2025 did not have an opportunity to fully engage with the Health and Individual (H&I) Block, there is a robust CHASE (Climate Health and Sustainability Education) curriculum component, whose objectives include illustrating why medical students should learn about climate change and also discussing why changing local ecosystems disproportionately impact vulnerable populations including the elderly, patients with underlying health conditions, people of color, and low-income communities. The session also provides a link to a [Climate and Health Assessment](#) resource. The Environmental Health and Health Professional Activism elective also includes an entire session taught by Dr. Nadia Gaber on the intersection of environmental racism, climate change, and urban segregation.*

**10. Does your medical school curriculum address the unequal regional health impacts of climate change globally?**

3	This topic was explored in depth by the core curriculum.
2	<b>This topic was briefly covered in the core curriculum.</b>
1	This topic was covered in elective coursework.
0	This topic was not covered.

*Score explanation: In our Pathogens, Host, & Defense (PHD) block, Dr. Peter Chin-Hong included a segment on how climate change is altering the geographical distribution of infectious diseases, including Chikungunya, Dengue, and Zika viruses. Dr. Chin-Hong similarly had a lecture titled “Climate Change, Infectious Diseases and COVID-19” during the Environmental Health and Health Professional Activism lunchtime elective.*

***Curriculum: Environmental Health & the Effects of Anthropogenic Toxins on Human Health***

**11. Does your medical school curriculum address the reproductive health effects of industry-related environmental toxins (e.g. air pollution, pesticides)?**

3	<b>This topic was explored in depth by the core curriculum.</b>
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.

*Score explanation: In the UCSF Life Stages block, there is a lecture on “Effects of Environmental Toxins and Reproductive Toxins” by Dr. Tracey Woodruff. Associated with the lecture were several course objectives related to environmental exposures, including “Explain how the health impacts of environmental exposure are distributed unequally within and between populations,” an important objective grounded in environmental justice. This lecture is followed by research-driven small group sessions on the effect of various environmental toxins on fertility and pregnancy. Furthermore, the*

*Environmental Health and Health Professional Activism elective includes a session taught by Dr. Santosh Pandipati on climate crisis impacts on reproductive health.*

**12. Does your medical school curriculum address important human-caused environmental threats that are relevant to the university’s surrounding community?**

3	This topic was explored in depth by the core curriculum.
<b>2</b>	<b>This topic was briefly covered in the core curriculum.</b>
1	This topic was covered in elective coursework.
0	This topic was not covered.

*Score explanation: The impacts of wildfires on rates of asthma in the Bay Area, particularly in Oakland, were discussed as a part of our Airway, Blood, & Circulation (ABC) 2 lecture on environmental contributions to obstructive lung disease given by Dr. Aaron Baugh. Elective opportunities are offered in exploring the environmental health issues faced by the Bayview Hunters-Point community in San Francisco in a talk entitled “Environmental Justice and Academic-Community Partnerships.” This session was led by Dr. Michelle Pierce in the Environmental Health and Health Professional Activism lunchtime elective.*

**13. To what extent does your medical school emphasize the importance of Indigenous knowledge and value systems as essential components of planetary health solutions?**

3	Indigenous knowledge and value systems are integrated throughout the medical school’s planetary health education
2	Indigenous knowledge and value systems as essential components of planetary health solutions are included briefly in the core curriculum.
1	Indigenous knowledge and value systems as essential components of planetary health solutions are included in elective coursework.
<b>0</b>	<b>This topic was not covered.</b>

*Score explanation: The UCSF Native American Health Alliance has aided the University in providing more comprehensive land acknowledgements, particularly in the Department of Surgery. The Native American Health Alliance also allows students to participate voluntarily on initiatives to promote land acknowledgements and advocate for indigenous health throughout the University and in the broader community. There was no discussion of indigenous knowledge of climate change in the core curriculum nor in the elective courses.*

**14. Does your medical school curriculum address the outsized impact of anthropogenic environmental toxins on marginalized populations such as those with low SES, women,**

communities of color, children, homeless populations, Indigenous populations, and older adults?	
3	This topic was explored in depth by the core curriculum.
<b>2</b>	<b>This topic was briefly covered in the core curriculum.</b>
1	This topic was covered in elective coursework.
0	This topic was not covered.
<p><i>Score explanation: In Dr. Tracey Woodruff’s lecture on “Environmental Toxics &amp; Reproductive Toxics” during the Life Stages block, there is a slide that illustrates that cumulative exposures to phthalates are higher in black women than white women. In Leticia Rolon’s lecture on End Stage Renal Disease, she discussed how agricultural workers remain susceptible to agricultural insecticides or pesticides, placing them at greater risk for end-stage renal disease. This was explicitly mentioned to be caused by the emerging role of climate change in the development of chronic kidney disease, though not listed as a testable learning objective.</i></p> <p><i>In the Climate Crisis and Health inquiry mini-course, a half day was dedicated to the discussion of environmental toxins and pharmaceuticals, including the climate change and environmental impacts of medicine production and waste. There was particular emphasis placed on lax environmental requirements at pharmaceutical manufacturing plants leading to local pharmaceutical pollution and broader environmental contamination, especially in poor and marginalized communities.</i></p>	

**Curriculum: Sustainability**

15. Does your medical school curriculum address the environmental and health co-benefits of a plant-based diet?	
3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
<b>1</b>	<b>This topic was covered in elective coursework.</b>
0	This topic was not covered.
<p><i>Score explanation: In our Renal, Endocrine, GI, &amp; Nutrition (REGN) block, we had lectures on nutrition taught by Dr. Michelle Guy, in which there were two infographics on the relative greenhouse-gas emissions associated with some common protein sources and the gallons of water used in food production per serving. However, none of these lectures mentioned sustainability as a factor in dietary choices or decreased carbon emissions as a co-benefit of healthier, plant-based diets. These points should be emphasized to clearly elucidate the connection between healthy dietary choices and a healthier environment (reduced carbon in the atmosphere and reduced water consumption). Discussions during the Inquiry Immersion elective course on climate change did cover the carbon footprints for the manufacturing processes for different food types.</i></p>	

<b>16. Does your medical school curriculum address the carbon footprint of healthcare systems?</b>	
3	This topic was explored in depth by the core curriculum
2	This topic was briefly covered in the core curriculum.
<b>1</b>	<b>This topic was covered in elective coursework.</b>
0	This topic was not covered.
<p><i>Score explanation: The main medical school curriculum does not acknowledge the role of the healthcare sector in contributing to climate change nor does it identify ways to advocate for and implement sustainable best practices in health care. However, in the climate change Inquiry Immersion course, there was a session on how sustainability interacts with healthcare value and specific sustainable practices that can be implemented in a healthcare setting. Objectives for the session included, "Compare the excess cost of U.S. healthcare with the cost of achieving carbon neutrality", "Describe cultural characteristics and dysfunctional metaphors that make containing healthcare costs and carbon emissions in the U.S. especially challenging", and "Discuss ethical tensions between allocating resources to individual patients and protecting the environment upon which the health of the wider community depends."</i></p>	

<b>17. Does your medical school curriculum cover these components of sustainable clinical practice in the <u>core</u> curriculum? (1 point each)</b>	
1	Waste production within the healthcare system and strategies for reducing waste in clinical activities, such as in the operating room
1	The impact of inhalers on the healthcare carbon footprint and the environmental benefit of dry powdered inhalers over metered dose inhalers.
1	The impact of anesthetic gasses on the healthcare carbon footprint and ways to reduce anesthesia environmental impacts, such as total intravenous anesthesia or choosing less environmentally anesthetic gas options with reduced greenhouse gas emissions.
1	The environmental impact of pharmaceuticals and over-prescribing as a cause of climate health harm. Alternatively teaching on deprescribing where possible and its environmental and health co-benefits would fulfill this metric.
1	The health and environmental co-benefits of non-pharmaceutical management of conditions where appropriate such as exercise or yoga classes for type 2 diabetes; social group activities such as gardening for mental health conditions; active transport such as bicycle schemes for obesity. This is commonly known as social prescribing in the UK.
1	The health and environmental co-benefits of avoiding over-medicalisation, over-investigation and/or over-treatment
<p><i>Score explanation: There is no mention of any of the following topics in our core curriculum.</i></p>	

*Curriculum: Clinical Applications*

<b>18. In training for patient encounters, does your medical school’s curriculum introduce strategies to have conversations with patients about the health effects of climate change?</b>	
2	Yes, there are strategies introduced for having conversations with patients about climate change in the core curriculum.
1	Yes, there are strategies introduced for having conversations with patients about climate change in elective coursework.
<b>0</b>	<b>No, there are not strategies introduced for having conversations with patients about climate change</b>
<i>Score explanation: UCSF has not offered any education to medical students related to talking to patients who have been affected by climate change.</i>	

<b>19. In training for patient encounters, does your medical school’s curriculum introduce strategies for taking an environmental history or exposure history?</b>	
2	<b>Yes, the core curriculum includes strategies for taking an environmental history.</b>
1	Only elective coursework includes strategies for taking an environmental history.
0	No, the curriculum does not include strategies for taking an environmental history.
<i>Score explanation: The mandatory curricular content has one small-group-based practice case surrounding possible environmental exposures affecting an infertile couple. While guidelines for taking an environmental history are not explicitly addressed, there is an example environmental history form linked to the session.</i>	

*Curriculum: Administrative Support for Planetary Health*

<b>20. Is your medical school currently in the process of implementing or improving Education for Sustainable Healthcare (ESH)/planetary health education?</b>	
4	<b>Yes, the medical school is currently in the process of making major improvements to ESH/planetary health education.</b>
2	Yes, the medical school is currently in the process of making minor improvements to ESH/planetary health education.
0	No, there are no improvements to planetary health education in progress.

*Score explanation: Several students and faculty are working on integrating climate health curriculum through a funded education grant called the Climate Health and Sustainability Education (CHASE) initiative. Over the last year, the CHASE initiative has developed a roadmap for infusing content with the UCSF 49 and foundational sciences and has successfully added climate health content to several Bridges blocks, including Airways, Blood, and Circulation and Health and the Individual. Over the next year, they plan to weave the environmental threads even more comprehensively, adding content in small groups throughout F1. In addition to teaching relevant health content, the curriculum aims to foster student engagement in advocacy for healthcare sustainability and climate justice, which focuses on decreasing the outsized effects of climate change on marginalized and vulnerable groups.*

*In addition, The Bridges Real Time Feedback tool is a way for students to make their curricular suggestions known in real time and change the curriculum in real time. UCSF has been supportive of student initiatives to change curricular elements in light of this feedback.*

**21. How well are the aforementioned planetary health/Education for Sustainable Healthcare topics integrated longitudinally into the core curriculum?**

6	Planetary health/ESH topics are well integrated into the core medical school curriculum.
4	<b>Some planetary health/ESH topics are appropriately integrated into the core medical student curriculum.</b>
2	Planetary health/ESH is not integrated and is primarily addressed in (a) standalone lecture(s).
0	There is minimal/no education for sustainable healthcare.

*Score explanation: Although there is longitudinal integration of climate health content throughout the preclinical curriculum, these topics are only included in a handful of lectures, each addressing climate change in only a couple slides. This content is associated with only two testable learning objectives throughout the core curriculum.*

**22. Does your medical school employ a member of faculty to specifically oversee and take responsibility for the incorporation of planetary health and sustainable healthcare as a theme throughout the course?**

1	<b>Yes, the medical school has a specific faculty/staff member responsible for overseeing curricular integration of planetary health and sustainable healthcare</b>
0	No, the medical school does not have a specific faculty/staff member responsible for overseeing curricular integration of planetary health and sustainable healthcare.

*Score explanation: Dr. Nick Iverson is a co-director of the Climate Health and Sustainability Education (CHASE) curriculum, aimed at integrating a core, comprehensive climate health and sustainability curriculum at the UCSF SOM -- with a particular focus on environmental justice.*

Section Total (42 out of 69)	B-
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*Are there additional curriculum resources offered at your medical school or institution not yet asked about that you would like to describe? If so, please do so below.*



## Interdisciplinary Research

***Section Overview:*** *This section evaluates the quality and quantity of interdisciplinary planetary health research at the medical school and broader institution. Interactions between health and the environment are complex and multifactorial. While climate change has been extensively studied from an environmental science perspective, planetary health is an emerging field. As leading health institutions with talented researchers and research resources, medical schools should fund research studying the health effects of climate change and anthropogenic environmental toxins. This obligation is particularly strong because the public and policymakers are more attentive to climate change when its implications for human health are emphasized.*

<b>1. Are there researchers engaged in planetary health research and healthcare sustainability research at your medical school?</b>	
<b>3</b>	<b>Yes, there are faculty members at the School of Medicine who have a primary research focus in planetary health or healthcare sustainability.</b>
2	Yes, there are individual faculty members at the School of Medicine who are conducting research related to planetary health or healthcare sustainability, but it is not their primary research focus.
1	There are planetary health and/or healthcare sustainability researchers at the institution, but none associated with the medical school.
0	No, there are no planetary health and/or healthcare sustainability researchers at the institution or medical school at this time.
<p><i>Score explanation: Among several faculty members at the School of Medicine with a primary research focus in planetary health research and healthcare sustainability, Dr. Sheri Weiser has incorporated climate change themes into her research on food insecurity and HIV in Africa. Additionally, Dr. Weiser currently works to incorporate climate change and sustainability themes into health professional education across the UC system, and works with publicly available databases to document negative health impacts of extreme weather events. Dr. Seema Gandhi's primary research focus is reducing anesthesia-related GHG emissions and operating room waste. Serving on the Bay Area Air Quality Management District Advisory Council and the U.S. Environmental Protection Agency's Board of Scientific Counselors, Dr. Gina Solomon's research centers on the intersection of environmental health, climate change, toxicology and air pollution.</i></p>	

<b>2. Is there a dedicated department or institute for interdisciplinary planetary health research at your institution?</b>	
<b>3</b>	<b>There is at least one dedicated department or institute for interdisciplinary planetary health research.</b>
2	There is not currently a department or institute for interdisciplinary planetary health research, but there are plans to open one in the next 3 years.

1	There is an Occupational and Environmental Health department, but no interdisciplinary department or institute for planetary health research.
0	There is no dedicated department or institute.
<p><i>Score explanation: The UC Center of Climate, Health and Equity - housed at and founded by UCSF faculty - names research as one of its core pillars. Research interests include pathways through which climate change shapes physical and mental health across the lifespan, climate solutions that maximize both human health and environmental benefits, and the critical factors (e.g. socioeconomic determinants and systemic injustices like environmental racism) that shape the health impact of and responses to climate change. In extending research opportunities to faculty and fellows, the Center launched the Climate and Health Seed Grant Program to support interdisciplinary research projects across the UC system that advance understanding of the human health impacts of climate change and the climate solutions that advance health equity.</i></p> <p><i>The UCSF EaRTH Center (Environmental Research and Translation for Health) is an interdisciplinary group that aims to focus on the impacts of harmful environmental pollutants on health and human development, offering numerous grants to support environmental health research for faculty and clinicians. For instance, the EaRTH Center launched the Mini-Seedling Awards Program, designed to enhance current research projects with an environmental health focus or to collect preliminary research data to support a NIH/NIEHS grant submission. The EaRTH Center Innovation Awards in Environmental Health (Mentored Scientist Award and Mentored Clinician Award) similarly awards \$10,000 to selected junior faculty and clinicians to embark on new projects in basic, epidemiological, or translational science or clinical/education in environmental health.</i></p>	

<b>3. Is there a process by which communities disproportionately impacted by climate change and environmental injustice give input or make decisions about the research agenda at your medical school?</b>	
3	<b>Yes, there is a process in which community members impacted by climate and environmental injustice have decision-making power in the climate + environmental research agenda.</b>
2	Yes, there is a process in which community members impacted by climate and environmental injustice advise the climate + environmental research agenda.
1	No, but there are current efforts to establish a process for community members to advise or make decisions on the research agenda.
0	There is no process, and no efforts to create such a process.
<p><i>Score explanation: The Community Engagement Core of the EaRTH Center informs all EaRTH Center priorities based on community input through the Stakeholder Advisory Board (SAB) in monthly meetings. The SAB members consist of practicing health professionals and learners working at the intersection of environment and health, including doulas, community health workers, public health professionals and NGO leaders. Together, they represent the environmental health research and education needs of their respective communities, review projects and pilot grants, and disseminate research opportunities with the broader clinical and policymaking communities.</i></p>	

**4. Does your institution have a planetary health website that centralizes ongoing and past research related to health and the environment?**

<b>3</b>	<b>There is an easy-to-use, adequately comprehensive website that centralizes various campus resources related to health and the environment including all of the following: upcoming events, leaders in planetary health at your institution, and relevant funding opportunities.</b>
2	There is a website that attempts to centralize various campus resources related to health and the environment, but it is hard-to-use, not updated, or not adequately comprehensive.
1	The institution has an Office of Sustainability website that includes some resources related to health and the environment.
0	There is no website.

*Score explanation: UCSF has several websites that compile ongoing and past research, climate health events, sustainability efforts, and other resources. The [EaRTH Center](#) website showcases upcoming events and opportunities regarding environmental health and justice, pilot projects, funding opportunities, and faculty involved within the center. The recently launched [UC Center for Climate, Health and Equity](#) website similarly houses important information about upcoming events and opportunities, affiliated collaborating partners, and newsletters. The [Office of Sustainability](#) website contains information about health metrics, ways to get and stay involved, current research projects, as well as green interventions around campus.*

**5. Has your institution recently hosted a conference or symposium on topics related to planetary health?**

<b>4</b>	<b>Yes, the medical school has hosted at least one conference or symposium on topics related to planetary health in the past year.</b>
3	Yes, the <b>institution</b> has hosted at least one conference or symposium on topics related to planetary health in the past year.
2	Yes, the institution has hosted a conference on topics related to planetary health in the past three years.
1	The institution has not hosted any conferences directly, but they have provided financial support for a local planetary health event.
0	No, the institution has not hosted a conference on topics related to planetary health in the past three years.

*Score explanation: UCSF hosted several symposiums and events in 2021, including:*

- *Mini-Medical School for the Public on Environmental Justice and Human Health: Creating Systemic Solutions - a 6-week series co-organized by the EaRTH Center faculty and staff, UCSF Program for Reproductive Health and the Environment, and San Francisco Bay Physicians for Social Responsibility in February and March 2021.*

- *NorCal Mini-Symposium for Climate and Pandemic Resilience in Health Care, co-hosted by UCSF and Stanford in February 2021.*
- *Spring 2021 Speaker Series on Climate Change and Health - hosted by the UCSF Office of Population Health and Health Equity and the UC Center for Climate, Health and Equity; topics included the urgent health threat of big wildfires, the impact of climate change on food security and migration, and the intersection of climate, racial and health justice.*
- *UCSF Department of Surgery Grand Rounds featured the presentation: “Climate Impacts on Human Health in the 21st Century: How Surgeons Can Learn, Engage and Deliver for their Patients and Families” - presented by Katherine Gundling, MD and Chelsea Landolin, NP*
- *NorCal Mini Symposium on Climate, Health and Equity held in February 2022, with a particular focus on how health professionals can effectively partner with communities for climate justice.*
- *The Growing Impact of Climate on Health: An Interprofessional Panel and Case Discussion Confirmation, hosted by the UC Center for Climate, Health and Equity and the UCSF Program for Interprofessional Education in February 2022.*

<b>6. Is your medical school a member of a national or international planetary health or ESH organization?</b>	
<b>1</b>	<b>Yes, the medical school is a member of a national or international planetary health or ESH organization</b>
0	No, the medical school is not a member of such an organization
<i>Score explanation: Both UCSF and the UCSF-UC Berkeley Joint Medical Program are members of the Global Consortium on Climate and Health Education. The UCSF Institute for Global Health Sciences is a member of the Planetary Health Alliance.</i>	

<b>Section Total (17 out of 17)</b>	<b>A+</b>
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*Are there additional research resources offered at your medical school or institution not yet asked about that you would like to describe? If so, please do so below.*

# Community Outreach and Advocacy

***Section Overview:*** *This section evaluates medical school engagement in community outreach and advocacy efforts associated with planetary health. Researching and teaching planetary health is necessary but not sufficient. It is critical that institutions also directly engage with communities most affected by environmental health harms. Although climate change is a problem largely created by those with power and resources, its impacts fall disproportionately on under-resourced populations and communities of color. Institutions should partner with local communities affected by climate change and pollution to share information about environmental health threats, advocate together for change, and provide opportunities for students to be a part of this work.*

<b>1. Does your medical school partner with community organizations to promote planetary and environmental health?</b>	
3	Yes, the medical school meaningfully partners with multiple community organizations to promote planetary and environmental health.
2	Yes, the medical school meaningfully partners with one community organization to promote planetary and environmental health.
1	<b>The institution partners with community organizations, but the medical school is not part of that partnership.</b>
0	No, there is no such meaningful community partnership.
<p><i>Score explanation: While UCSF has a close partnership with the San Francisco Department of Public Health, the School of Medicine is not involved with the San Francisco Climate and Health Action Plan. Neither the University nor the School of Medicine use their platform to its full potential to advocate for the environmental health of the communities we serve.</i></p>	

<b>2. Does your medical school offer community-facing courses or events regarding planetary health?</b>	
3	<b>The medical school offers community-facing courses or events at least once every year.</b>
2	The medical school offers courses or events open to the community at least once per year, but they are not primarily created for a community audience.
1	The institution has offered community-facing courses or events, but the medical school was not involved in planning those courses or events.
0	The medical school has not offered such community-facing courses or events.
<p><i>Score explanation: The Health Emergency of Climate Change “Mini Medical School for the Public” interactive lecture series serves as a community resource for members of the community interested in</i></p>	

*learning more about Climate Change and health. Additionally, the UCSF Office of Sustainability website features useful information on the topic that the community can access.*

**3. Does your medical school have regular coverage of issues related to planetary health and/or sustainable healthcare in university update communications?**

2	Yes, all students regularly receive communication updates dedicated to planetary health and/or sustainable healthcare.
1	Yes, planetary health and/or sustainable healthcare topics are sometimes included in communication updates.
0	<b>Students do not regularly receive communications about planetary health or sustainable healthcare.</b>

*Score explanation: UCSF Students do not receive updates and coverage related to the University's sustainability efforts. This is a huge area of opportunity for UCSF to better inform the community about efforts to achieve its carbon neutrality goals by 2025.*

**4. Does the institution or main affiliated hospital trust engage in professional education activities targeting individuals post graduation with the aim of ensuring their knowledge and skills in planetary health and sustainable healthcare remain up to date during their professional career?**

2	<b>Yes, the institution or main affiliated hospital trust offers multiple in-person or online courses relating to planetary health and/or sustainable healthcare for post-graduate providers, including at least one with a primary focus of planetary health.</b>
1	Yes, the institution or main affiliated hospital trust offers one course relating to planetary health and/or sustainable healthcare for post-graduate providers
0	There are no such accessible courses for post-graduate providers

*Score explanation: At University of California San Francisco, there was a "Vulnerable Workers and Communities at Environmental Risk and Updates in Occupational and Environmental Medicine" CME conference. On the continuing medical education website linked from the UCSF medical education page, there is an online module on "Clinician Climate and Health Training" that offers three 20-minute modules on the links between climate change and health. This training module was developed by the San Francisco Department of Public Health's Climate Change and Health Program and is narrated by Jonathan Fuchs, MD, MPH, a clinical professor of medicine at UCSF. CME courses can be viewed [here](#).*

**5. Does your medical school or its primary affiliated hospital have accessible educational materials for patients about environmental health exposures?**

2	<b>Yes, all affiliated hospitals have accessible educational materials for patients.</b>
1	Some affiliated hospitals have accessible educational materials for patients.
0	No affiliated medical centers have accessible educational materials for patients.
<p><i>Score explanation: The Program on Reproductive Health and the Environment at UCSF has produced a series of online and printed patient-facing brochures about toxic exposures called “Toxic Matters”, “Work Matters”, “Pesticides Matter”, and “Food Matters”. These brochures can be found <a href="#">here</a>.</i></p>	

<b>6. Does your medical school or its primary affiliated hospital have accessible educational materials for patients about climate change and health impacts?</b>	
2	<b>Yes, all affiliated hospitals have accessible educational materials for patients.</b>
1	Some affiliated hospitals have accessible educational materials for patients.
0	No affiliated hospitals have accessible educational materials for patients.
<p><i>Score explanation: UCSF Health, ZSFGH, and the SF VA have educational materials related to climate change. <a href="#">San Francisco Climate and Health Profile &amp; 3.7 Greenhouse Gas Emissions and Climate Change</a></i></p>	

<b>Section Total (10 out of 14)</b>	<b>B</b>
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*Are there additional community engagement and advocacy resources offered at your medical school or institution not yet asked about that you would like to describe? If so, please do so below.*

# Support for Student-Led Planetary Health Initiatives

**Section Overview:** This section evaluates institutional support for student-led planetary health initiatives, such as funding, fellowships, programming, and student groups. Planetary health is a young field and, as young people facing a future deeply shaped by climate change, students are often some of the first at an institution to engage with it. Institutions should provide support for students to engage in sustainability quality improvement (QI) initiatives, discover mentors in their area of interest, and receive funding for planetary health projects.

1. Does your institution offer support for medical students interested in enacting a sustainability initiative/QI project?	
2	Yes, the institution <i>either</i> offers grants for students to enact sustainability initiatives/QI projects <i>or</i> sustainability QI projects are part of the core curriculum.
1	The medical school encourages sustainability QI projects (to fulfill clerkship or longitudinal requirements) and offers resources to help students succeed in these projects, but there is no student funding available and there is no requirement to participate.
0	No, the institution does not offer opportunities or support for sustainability initiatives or QI projects.
<p><i>Score explanation: The UC President's Bonnie Reiss Carbon Neutrality Initiative (CNI) Student Fellowship Program and Global Food Initiative (GFI) Fellowship Program funds student-generated projects that support the UC system's goal to produce zero-net greenhouse gas emissions by 2025. At UCSF, examples of CNI fellowships include the Campus Engagement fellowship (which seeks to engage students, faculty and staff through three events toward achieving the UC Carbon Neutrality goals) and the Environmentally Preferable Purchasing fellowship (which seeks to reduce energy and waste by tracking and incentivizing energy efficient purchases and waste minimization practices, greener cleaning and safer furnishings).</i></p>	

2. Does your institution offer opportunities for medical students to do research related to planetary health and/or sustainable healthcare?	
2	The institution has a specific research program or fellowship for students interested in doing planetary health/sustainable healthcare research.
1	There are research opportunities for students to perform research related to planetary health/sustainable healthcare but these require student initiative to seek these out and carry them out in their spare time.
0	There are no opportunities for students to engage in planetary health/sustainable healthcare research.
<p><i>Score explanation: Launched by the UCSF EaRTH Center, the Environmental Scholars Program (ESP) is a 3-year community-based clinical and research program that provides two 1st year medical</i></p>	



*or nursing students at UCSF with a summer internship experience to learn about factors in the environment that determine health outcomes, placing students in a community clinic or community health organization to work on projects that investigate environmental exposures such as community health and safety concerns, often for underserved communities with multiple potential environmental chemical exposures.*

**3. Does the medical school have a webpage where medical students can find specific information related to planetary health and/or sustainable healthcare activities and mentors within the medical school? For example, projects achieved, current initiatives underway at the medical school and/or contact of information of potential mentors.**

2	<b>The medical school has a web page with specific information related to planetary health or sustainable healthcare that includes up-to-date information on relevant initiatives and contact information of potential mentors.</b>
1	There is a medical school webpage that features some information on projects and mentors within planetary health and sustainable healthcare within the medical school, but it lacks key information.
0	There is no medical-school specific webpage for locating planetary health and/or sustainable healthcare projects or mentors.

*Score explanation: The UCSF EaRTH Center is an interdisciplinary group that aims to focus on the impacts of harmful environmental pollutants on health and human development. Their website features specific information about mentors, projects achieved and underway, funding opportunities, and contact information. The newly established Center for Climate, Health, and Equity is focused exclusively on climate change and its impacts on health, with a website that lists research affiliates and current opportunities.*

**4. Does your medical school have registered student groups dedicated towards fostering a culture of planetary health engagement, scholarship, and advocacy on campus, supported by faculty advisors?**

2	<b>Yes, there is a student organization with faculty support at my medical school dedicated to planetary health or sustainability in healthcare.</b>
1	Yes, there is a student organization at my medical school dedicated to planetary health or sustainability in healthcare but it lacks faculty support.
0	No, there is not a student organization at my institution dedicated to planetary health or sustainability in healthcare.

*Score explanation: Human Health + Climate Change (HHCC) is an interdisciplinary student organization at UCSF made up of medical, pharmacy, nursing and dentistry students focused on creating awareness and enacting change at the intersection of climate change and health.*

**5. Is there a student liaison representing sustainability interests who serves on a medical school or institutional decision-making council to advocate for curriculum reform and/or sustainability best practices?**

<b>1</b>	Yes, there is a student representative that serves on a medical school or institutional decision-making council/committee.
<b>0</b>	<b>No, there is no such student representative.</b>

*Score explanation: There is a student organization about planetary health (Human Health + Climate Change - HHCC), but no student representative that serves on the medical school or institutional council. A student does sit on the advisory board of the Office of Sustainability, but no students are involved with the Office of the President which oversees the Office of Sustainability.*

**6. In the past year, has the institution had one or more co-curricular planetary health programs or initiatives in the following categories? (1 point each)**

<b>1</b>	<b>Projects where students are able to gain experience in organic agriculture and sustainable food systems, such as gardens, farms, community supported agriculture (CSA), fishery programs, or urban agriculture projects.</b>
<b>1</b>	<b>Panels, speaker series, or similar events related to planetary health that have students as an intended audience.</b>
<b>1</b>	<b>Events in which students learn directly from members of a local environmental justice community about the climate and environmental challenges they face, and how health professionals can partner with their community to address these exposures and impacts.</b>
<b>1</b>	Cultural arts events, installations or performances related to planetary health that have students as an intended audience.
<b>1</b>	Local volunteer opportunities related to building community resilience to anthropogenic environmental impacts.
<b>1</b>	<b>Wilderness or outdoors programs (e.g., that organize hiking, backpacking, kayaking, or other outings for students)</b>

*Score explanation: Dr. Rupa Marya, an Associate Professor of Medicine at UCSF and faculty director of the Do No Harm Coalition, is currently researching the impact of urban regenerative agriculture on the health of historically oppressed people, examining the connection between soil health, human health and inflammation. Although not directly affiliated with the institution, students in partnership with Do No Harm can join immersive sessions at the Ramaytush Ohlone Farm, where they can learn about healing through land back. To address food insecurity and hunger in the local communities, organic produce from the farm will be freely distributed to institutions like the Tenderloin Neighborhood Development Corporation.*

*In Spring 2021, UCSF hosted an Environmental Justice and Human Health: Creating Systemic Solutions medical school mini-series, which is a set of 6 weekly talks regarding how we can create*

*solutions for environmental injustice issues. Among other topics in planetary health, the fall 2021 lunchtime elective titled “Environmental Health and Health Professional Activism Elective” also provided students the opportunity to learn directly from Michelle Pierce, an environmental justice advocate with the Bayview Community Advocates. UCSF also offers the Rec Pass to students, which gives training on wilderness and outdoor programs that follow Leave No Trace principles.*

**Section Total (12 out of 15)**

**A-**

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*Are there additional student-led initiative resources offered at your medical school or institution not yet asked about that you would like to describe? If so, please do so below.*

# Campus Sustainability

***Section Overview:*** This section evaluates the support and engagement in sustainability initiatives by the medical school and/or institution. The healthcare industry is a major contributor to greenhouse gas emissions as well as pollution that harms local, regional, and global ecosystems. While healthcare is, by nature, a resource-intensive endeavor, the healthcare sector is well poised to lead the world to a more sustainable future. This will involve scrutinizing every aspect of how our systems operate, from where we source our energy, to how we build our infrastructure, to what companies we invest in. Our medical schools, clinics, and hospitals must set the standard for sustainable practices, and show other sectors what is possible when it comes to minimizing environmental impact.

1. Does your medical school and/or institution have an Office of Sustainability?	
3	<b>Yes, there is an Office of Sustainability with multiple full-time staff dedicated to campus sustainability. If the Office of Sustainability serves the entire campus, there is at least one designated staff member for sustainability at the hospital and/or medical school.</b>
2	There is an Office of Sustainability with one or more full-time staff dedicated to campus sustainability, but no specific staff member in charge of medical school and/or hospital sustainability.
1	There are no salaried sustainability staff, but there is a sustainability task force or committee
0	There are no staff members or task force responsible for overseeing campus sustainability
<p><i>Score explanation: UCSF has an <a href="#">Office of Sustainability</a> with a full time director. The Office of Sustainability organizes the <a href="#">Advisory Committee on Sustainability</a>, which includes campus representation from each school, including the school of medicine (Dr. Katherine Gundling). This committee helps to oversee energy, utilities, infrastructure, food, and purchasing sustainability at UCSF's medical campuses.</i></p>	

2. How ambitious is your medical school/institution's plan to reduce its own carbon footprint?	
4	The institution has a stated goal of carbon neutrality by 2030 or earlier and the medical school / institution has a well-defined and adequate plan in place to achieve this goal.
3	Yes, there is a stated carbon neutrality goal by at least 2040 and the medical school/institution has a well-defined and adequate plan in place to achieve this goal.
2	<b>Yes, there is a stated carbon neutrality goal by at least 2040, but the medical school/institution has not created a plan to reach that goal or the plan is inadequate.</b>
1	There is a CO2 emission reduction goal, but it is not one of carbon neutrality.
0	There is no stated goal for reduction of CO2 emissions.

*Score explanation: UCSF has a goal to become carbon neutral by 2025. The current plan is detailed in a “Solutions Portfolio” that was shared with students for this project. The portfolio contains a graph that charts GHG emissions for UCSF, reported in MTCO<sub>2e</sub> (megatons of CO<sub>2</sub> equivalent - represents an amount of GHG whose atmospheric impact has been standardized to that of one unit mass of carbon dioxide based on the global warming potential of the gas). While substantial reductions in emissions have been made since 2008 (from approximately 140 MTCO<sub>2e</sub> to 85 MTCO<sub>2e</sub> in 2020), levels of emissions reductions have stagnated. Projects in renovations, on-site solar, and increases in energy efficiency are projected to further reduce emissions by 20 MTCO<sub>2e</sub> by 2025, while the remaining 65 MTCO<sub>2e</sub> will be offset via the purchase of carbon offsets. The report projects the level of emissions for the university through 2040, which shows the intention to continue to purchase offsets for the 65 MTCO<sub>2e</sub> produced by the university every year as opposed to working towards further emissions reductions, which is urgently necessary to avoid climate impacts. For these reasons, we believe the plan is inadequate. We believe this is further evidenced in the university’s lagging behind in many of their stated goals. For example, although the university seeks to have an entirely electric fleet of shuttles by 2025, the most recent statistics place the percentage of electric or hybrid vehicles at 24%. Furthermore, the goal of achieving carbon neutrality by 2025 must be made an urgent priority since only 62% of current energy consumption is clean. Finally, on a more individual level, the Office of Sustainability website has [published an article](#) on how students, employees, and staff can help to offset their carbon footprint, but virtually none of these measures are required, nor are they well advertised.*

**3. Do buildings/infrastructure used by the medical school for teaching (not including the hospital) utilize renewable energy?**

3	Yes medical school buildings are 100% powered by renewable energy
2	Medical school buildings source >80% of energy needs from off-site and/or on-site renewable energy.
1	<b>Medical school buildings source &gt;20% of energy needs from off-site and/or on-site renewable energy.</b>
0	Medical school buildings source <20% of energy needs from off-site and/or on-site renewable energy.

*Score explanation: 98% of electricity purchased by UCSF is from carbon free sources, mostly solar and hydroelectric. The university is actively increasing on-site generation of clean energy including the construction of a 244kW solar panel array atop the Gateway Medical Building, which would provide about [4 percent of the annual electricity used at UCSE](#). This is in addition to UCSF’s other on-site solar panels already installed at 3rd St. Garage, Genentech Hall, and the Aldea conference center. Despite these projects and achievements, only 62% of total electricity consumed by UCSF is clean. Commitment to 100% clean and renewable energy is key for UCSF to reach its net zero emissions and sustainability goals. (Note that this statistic is not published on the Office of Sustainability website. It was obtained from internal documents shared with students for this report.)*

**4. Are sustainable building practices utilized for new and old buildings on the medical school campus, with design and construction of new buildings and remodeling of old buildings**

conforming to a published sustainability rating system or building code/guideline?	
3	Yes, sustainable building practices are utilized for new buildings on the medical school campus and the majority of old buildings have been retrofitted to be more sustainable.
2	<b>Sustainable building practices are utilized for new buildings on the medical school campus, but most old buildings have not been retrofitted.</b>
1	Sustainable building practices are inadequately or incompletely implemented for new buildings.
0	Sustainability is not considered in the construction of new buildings.
<p><i>Score explanation: The UC system-wide Sustainable Practices policy requires that all new construction and renovations meet the Leadership in Energy and Efficiency Design (LEED) Silver criteria at a minimum, and the university has a goal of meeting LEED Gold certification for all new projects undertaken. There has been an important achievement in this regard: the new Precision Cancer Medicine Building was LEED Gold certified in 2020. Unfortunately, there is no University wide and health system wide plan to have existing buildings retrofitted to achieve LEED certification and no major commitment as to achieving LEED Gold certification for the construction of the new hospital at Parnassus Heights, although many buildings at Parnassus have been retrofitted to meet LEED certification. UCSF Health should meet the University's goal of achieving LEED Gold certification for all new constructions with on-site and off-site sustainable energy generation and storage as potential off-sets for the massive energy used by our hospitals. One ambitious goal would be to aim for a LEED Platinum designation for a UCSF Hospital, which would make it one of <a href="#">4 hospitals in the country with the designation.</a></i></p> <p><a href="#">UCSF Sustainability</a>   <a href="#">Review Metrics &amp; Annual Reports</a>   <a href="#">Review Metrics</a></p>	

5. Has the medical school implemented strategies to encourage and provide environmentally-friendly transportation options for students and reduce the environmental impact of commuting?	
2	Yes, the medical school has implemented strategies to encourage and provide environmentally-friendly transportation options such as safe active transport, public transport, or carpooling and these options are well-utilized by students. Alternatively, the campus location is not amenable to unsustainable forms of transportation by default.
1	<b>The medical school has implemented some strategies to provide environmentally-friendly transportation options, but the options are unsatisfactorily accessible or advertised.</b>
0	The medical school has not implemented strategies to encourage and provide environmentally-friendly transportation options.
<p><i>Score explanation: UCSF offers a shuttle service that connects all five major campuses, bike racks for cycling commutes, rideshare options, and pre-tax commuter benefits to employees in an effort to reduce the number of single occupancy vehicles (SOV) on the road and to reduce the carbon footprint of employee and student commute. However, the university has not yet met its goal of achieving less than 22% SOV among its commuters. This has led to an inadequate reduction in GHG emissions from transportation at UCSF. Furthermore, the university must move quickly if it is to achieve the 100%</i></p>	

electric fleet goal set for 2025. [Latest data](#) on the Office of Sustainability website reports that so far, only 24% of the fleet is either hybrid or electric.

**6. Does your medical school have an organics recycling program (compost) and a conventional recycling program (aluminum/paper/plastic/glass)?**

2	<b>Yes, the medical school has both compost and recycling programs accessible to students and faculty.</b>
1	The medical school has either recycling or compost programs accessible to students and faculty, but not both.
0	There is no compost or recycling program at the medical school.

*Score explanation: UCSF School of Medicine has a robust recycling and compost program on campus in an attempt to achieve zero-waste. The medical school buildings all have multiple waste bins throughout that enable students, staff, and faculty to separate trash, compost, and recycling. UCSF maintains a goal of zero waste (defined as diverting 90% of all campus solid waste from landfill) by 2020. The Office of Sustainability lists the [most recent statistic](#) as achieving 78% solid waste diversion from landfills (FY 19-20). In order to reach the goal of zero waste, the school could host more frequent bulky and e-waste drop-off days as well as furthering outreach and education on waste diversion.*

**7. Does the medical school apply sustainability criteria when making decisions about the campus food and beverage selections (e.g. local sourcing, reduced meat, decreased plastic packaging)?**

3	Yes, the medical school has adequate sustainability requirements for food and beverages, including meat-free days or no red-meat, and is engaged in efforts to increase food and beverage sustainability.
2	There are sustainability guidelines for food and beverages, but they are insufficient or optional. The medical school is engaged in efforts to increase food and beverage sustainability.
1	<b>There are sustainability guidelines for food and beverages, but they are insufficient or optional. The medical school is not engaged in efforts to increase food and beverage sustainability.</b>
0	There are no sustainability guidelines for food and beverages.

*Score explanation: As a University of California campus, UCSF follows the [University of California Sustainable Procurement Guidelines](#), which outlines sustainability criteria for food and beverage procurement. Currently, the university recognizes the [AASHE STARS 2.2 Technical Manual](#) food and beverage sustainably or ethically produced criteria. UCSF campus procures 31% of food and beverages from sustainable sources, thus exceeding the 25% minimum goal outlined in the procurement guidelines. However, UCSF Health more broadly only procures 12% of food and beverages from sustainable sources. This shows the complacency of UCSF as a whole in sustainable food and beverage procurement, as well as a missed opportunity to substantially decrease the university's carbon*

*footprint. Reducing the amount of beef purchased, for example, could substantially reduce UCSF's carbon footprint and bring the university closer to its carbon neutrality goals. The university does not have explicit goals or plans to continue increasing the percentage of food and beverages that are sustainably sourced.*

**8. Does the medical school or associated institution apply sustainability criteria when making decisions about supply procurement?**

<b>3</b>	<b>Yes, the medical school has adequate sustainability requirements for supply procurement and is engaged in efforts to increase sustainability of procurement.</b>
2	There are sustainability guidelines for supply procurement, but they are insufficient or optional. The medical school is engaged in efforts to increase sustainability of procurement.
1	There are sustainability guidelines for supply procurement, but they are insufficient or optional. The medical school is not engaged in efforts to increase sustainability of procurement.
0	There are no sustainability guidelines for supply procurement.

*Score explanation: As a University of California campus, UCSF follows the [University of California Sustainable Procurement Guidelines](#). This document lays out the minimum sustainability requirements for products and services purchased by the university. Two types of "Green Spend" (the percentage of procurement budget spent on environmentally sustainable products) are defined: (1) required level green spend, which are the minimum mandatory requirements for each product category and (2) preferred level green spend, which is an additional, more ambitious sustainability goal. For example, purchasing standards for computers, monitors, and printers must have an EPEAT Bronze label to qualify as "required level" green spend, but must have EPEAT Gold or highest available EPEAT label to qualify for "preferred level" green spend. Categories of products included are: appliances, IT hardware, janitorial supplies, flooring, food and beverages, foodware, indoor furniture, lighting, office supplies, and water appliances. Currently, UCSF sustainable procurement in cleaning supplies is at 60%, office furniture is at 93%, and electronics at 27%. While these guidelines represent a minimum standard of "Green Spend" on supply procurement (roughly 25%) and thus meet the criteria for a score of 3, there is no plan at UCSF in place currently to continue to expand the percentage of sustainable procurement in each product category.*

**9. Are there sustainability requirements or guidelines for events hosted at the medical school?**

2	Every event hosted at the medical school must abide by sustainability criteria.
<b>1</b>	<b>The medical school strongly recommends or incentivizes sustainability measures, but they are not required.</b>
0	There are no sustainability guidelines for medical school events.

*Score explanation: The UCSF office of sustainability has published the [LivingGreen Event Guide](#) to help event planners make sustainable choices in food, dishware/cutlery, and communication materials*



and even makes recommendations on transportation for events and how to handle leftover food. There is also a brief [webinar](#) posted on the UCSF office of sustainability website that walks event planners through the entire process. As of now, these event sustainability guidelines are recommended but not required. This means that the [90 catered events that take place each week](#) have no minimum mandatory sustainability requirements.

**10. Does your medical school have programs and initiatives to assist with making lab spaces more environmentally sustainable?**

2	<b>Yes, the medical school has programs and initiatives to assist with making lab spaces more environmentally sustainable.</b>
1	There are guidelines on how to make lab spaces more environmentally sustainable, but not programs or initiatives.
0	There are no efforts at the medical school to make lab spaces more sustainable.

*Score explanation: The [LivingGreen program](#) is a university-wide program where a team of experts meet with labs on-site and provide recommendations to reduce the lab's environmental impact, including waste reduction and energy efficiency. Once a lab has expressed interest and the initial assessment is made, action can be taken to "green" the lab. The LivingGreen team then returns during the following quarter to see what improvements have been made and award points. Number of points earned assigns a bronze, silver, gold, or platinum certification, with platinum being the highest sustainability certification level. The LivingGreen certification program lists 28 labs at UCSF that have a certification: 10 bronze, 5 silver, 2 gold, 2 platinum, and 11 without a certification level specified. Currently, the LivingGreen program is optional. More labs should be incentivized to pursue a LivingGreen certification.*

**11. Does your institution's endowment portfolio investments include fossil-fuel companies?**

4	<b>The institution is entirely divested from fossil fuels and has made a commitment to reinvest divested funds into renewable energy companies or renewable energy campus initiatives.</b>
3	No, the institution is entirely divested from fossil fuels.
2	The institution has partially divested from fossil fuel companies or has made a commitment to fully divest, but currently still has fossil fuel investments.
1	The institution has not divested from fossil-fuel companies, but faculty and/or students are conducting organized advocacy for divestment.
0	Yes, the institution has investments with fossil-fuel companies and there have been no efforts to change that.

*Score explanation: In 2019, UC faculty voted to divest from fossil fuel companies. In May of 2020, the university divested \$13.4 billion in endowment funds and its \$70 billion pension fund from fossil-fuels*

and re-invested 1 billion dollars into renewable energy. [University of California Endowment. Pension to Divest All Fossil Fuels.](#)

**Section Total (22 out of 31)**

**B**

Back to summary page [here](#)

*Are there additional sustainability resources offered at your medical school or institution not yet asked about that you would like to describe? If so, please do so below.*

# Grading

## Section Overview

This section focuses on the grading of the report card. The institution received a grade for each of the individual sections as well as an overall institutional grade. Section point totals were tallied, divided by the total points available for the section, and converted to a percentage. The overall institutional grade is a weighted average of the section grades, with curriculum receiving a higher weight owing to its larger number of metrics. Letter grades for each section and the institution overall were then assigned according to the table below.

Letter Grade*	Percentage
A	80% - 100%
B	60% - 79%
C	40% - 59%
D	20% - 39%
F	0% - 19%

*\*Within each grade bracket, a score in the top 5% (\_5 to \_9%), receives a “+”, and a score in the bottom 5% (\_0- \_4%) receives a “-”. For example, a percentage score of 78% would be a B+.*

[Click [here](#) to calculate your score]

## Planetary Health Grades for the UCSF School of Medicine

The following table presents the individual section grades and overall institutional grade for the UCSF School of Medicine on this medical-school-specific Planetary Health Report Card.

Section	Raw Score	Letter Grade
<b>Planetary Health Curriculum (30%)</b>	$(42 / 69) \times 100 = 61\%$	B-
<b>Interdisciplinary Research (17.5%)</b>	$(17 / 17) \times 100 = 100\%$	A+
<b>Community Outreach and Advocacy (17.5%)</b>	$(10 / 14) \times 100 = 71\%$	B
<b>Support for Student-led Planetary Health Initiatives (17.5%)</b>	$(12 / 15) \times 100 = 80\%$	A-
<b>Campus Sustainability (17.5%)</b>	$(23 / 31) \times 100 = 74\%$	B
<b>Institutional Grade</b>	<b>75%</b>	<b>B+</b>

# Report Card Trends

## Section Overview

This graph demonstrates trends in overall and section grades for the years in which University of California, San Francisco has participated in the Planetary Health Report Card initiative.

