Planetary Health Report Card:

University of California, San Francisco

2020-2021 Contributing Team:
- Students: Mikias Negussie*, Neha Pondicherry, Shreya Menon
- Faculty Mentors: Katherine Gundling, MD
- *Primary Contact: Mikias Negussie, mikias.negussie@ucsf.edu

Summary of Findings

Curriculum	B

- Planetary health (PH) is woven throughout the Bridges Curriculum and there are established and concrete ways students can notify faculty of areas of improvement for the curriculum in real time. Elements of the core curriculum outline clearly how human health is intimately tied to PH.
- PH connections could be improved by providing students with strategies on how to counsel patients that are affected by climate change and other PH issues.

Interdisciplinary Research	A+

- UCSF has the EaRTH Center, Program for Reproductive Health and the Environment, the Office of Sustainability, and the Center for Climate, Health, and Equity which provide great interprofessional opportunities for environmental health engagement as well as research and funding opportunities.
- However, UCSF SOM continues to lack substantial research from faculty directly at the School of Medicine, and does not yet have a way to incorporate the feedback of community members disproportionately affected by climate change.

Community Outreach and Advocacy	B

- Although UCSF has the infrastructure to communicate how environmental health and climate change are intimately tied to human health and therefore scores highly in this category, the University often misses opportunities to use its platform to make the link between planetary health and human health explicit. For example, when Speaker Pelosi had a conversation with Chancellor Hawgood earlier this year, no questions were asked of Speaker Pelosi as to what the House of Representatives would do to improve the health of our planet and its citizens.

Support for Student-Led Initiatives	A-

- Overall, the administration is supportive of student-led PH initiatives, offering their 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.

Sustainability	B+

- UCSF has robust waste reduction, water conservation, toxics reduction, sustainable food, green procurement, energy efficiency, green procurement, green labs, and education/engagement efforts. The LivingGreen certification for offices, labs, clinic/units, homes and events further engage staff and students.
- The university has a commitment to achieve carbon neutrality by 2025. This will be addressed in building carbon neutral buildings, purchase/lease of zero emissions shuttles and seeking 50% alternative fuel fleet, transitioning from nat gas to electric heating/cooling in existing buildings, influencing commuters to use alternative transportation or EVs, and reducing business travel. More sustainable sourcing of meat products are happening in UCSF cafeterias. UCSF is now sourcing 97% electricity from carbon-free sources and has significantly reduced GHG emissions since 2010.

Statement of Purpose

Planetary health is human health.

The Planetary Health Alliance defines planetary health as "a field focused on characterizing the human health impacts of human-caused disruptions of Earth's natural systems." 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 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.

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 change. Therefore, it is critical that medical students are trained to understand the health effects of climate change, as well as planetary health 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 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.
Note: UCSF School of Medicine offers three student-organized electives related to ESH/planetary health: 1. Earth Health, 2. Women's Health, Environment, and Health Professional Activism, and 3. Rethinking Farm-Food-Health-Climate Connections. A course on climate change is also one of the options for a required two-week deep-dive "Inquiry Immersion" for medical and pharmacy students. The existence of three student-run electives supports strong student interest in these topic areas.	

Curriculum: Health Effects of Climate Change

2. Does your medical school curriculum address the relationship between extreme temperature health risks and climate change, as well as the socioeconomic/racial disparities in extreme heat exposure?	
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.

Note: During a lecture on racial disparities in pulmonary disease as a part of the Airways, Blood, and Circulation Block, Dr. Aaron Baugh described how climate change disproportionately affects people of color. He went on to discuss how this compounds existing racial and ethnic disparities in access to care, leading to a situation where both the climate, environment, and the healthcare system are contributing to worse outcomes in pulmonary disease in communities of color. During the Renal, Endocrine, GI, and Nutrition block, Dr. Leticia Rolon also discussed the way climate change affects renal disease, with extreme heat and resulting chronic dehydration worsening CKD.
Score explanation: Two mentions of how extreme temperature and climate change interacts with socioeconomic and racial disparities to affect health outcomes meets the threshold of in depth coverage of this topic in the core curriculum.

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.
2	**This topic was briefly covered in the core curriculum.**
1	This topic was covered in elective coursework.
0	This topic was not covered.
Note: During a lecture on pulmonary diseases as a part of the Airways, Blood, and Circulation (ABC) Block, Dr. Somaz Manuel, MD covered the interaction of wildfires with asthma distribution in the United States, particularly children living in the East Bay having particularly frequent exposure to wildfire smoke.	
Score explanation: 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.	

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

Example: 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.
Score explanation: The appearance of this concept within the course objectives of the PHD block represents adequate coverage of this metric.

5. Does your medical school curriculum address the cardiorespiratory health effects of climate change, including air pollution?	
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.
Example: There were mentions of the cardiorespiratory health effects of air pollution in lectures as a part of the ABC block, including the health effects of wildfire smoke along with the health effects of highway air pollution.	
The School of Medicine could improve by providing more guidance as to how health care providers can counsel patients and policy makers about the cost of air pollution in our hospitals and how this cost will change on a changing planet. Still, the Bridges Curriculum adequately discusses the effect of air pollution and climate change on cardiorespiratory health.	

6. 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.
2	This topic was briefly covered in the core curriculum.
1	**This topic was covered in elective coursework.**
0	This topic was not covered.
Note: 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.	

Discussions during the Inquiry Immersion elective course on climate change highlighted resilience among those working to mitigate climate change.
Score explanation: One mention of the mental health impacts of climate change in an elective lecture earns a score of 1 in this category.

7. Does your medical school curriculum address the relationships between health, individual patient food and water security, ecosystem health, 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.
Note: The core medical school curriculum does not address the relationship between individual patient food security, ecosystem health, and climate change. However, lectures on food security arose in the "Rethinking Farm-Food-Health-Climate Connections" elective, with sessions on "Food Justice and Food Insecurity: Race/Class/Distribution" and "The Competing Concerns of Food Safety and Conservation Agriculture: Eradicating E. Coli vs. Promoting Biodiversity". The topic of food security was also the focus of some discussions during the elective Inquiry Immersion course on climate change.	

8. 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, children, homeless populations, and older adults?	
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.
Note: In Tracey Woodruff's lecture on "Environmental Toxics & Reproductive Toxics", there is a slide that illustrates that cumulative exposures to phthalates are higher in black women than white women. Environmental determinants of health with a focus on the outsized impact on vulnerable populations was also explored in the lectures presented at the Women's Health, the Environment, and Health Professional Activism elective. There was also discussion in our ABC2 lecture on asthma about the intentional segregation of marginalized groups into areas with higher levels of pollution. During our obesity lecture as a part of our Renal, Endocrine, GI, and Nutrition (REGIN) block, we also discussed	

how the lack of open spaces where outdoor recreation is scarce can be a contributing factor to higher rates of obesity seen in communities of lower SES.
Score explanation: Several discussions of the interactions between SES, race, gender and the environment with a focus on the resultant health effects are present throughout the Bridges Curriculum.

9. Does your medical school curriculum address the unequal health impacts of climate change globally?	
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.
Note: The Evidence to Policy Institute at UCSF conducts research and provides an opportunity for students throughout the University to study how Climate Change affects health policy globally. In our Pathogens, Host, & Defense (PHD) block, Dr. Peter Chin-Hong also included a segment on how climate change is altering the geographical distribution of infectious diseases, including Chikungunya, Dengue, and Zika viruses.	
Score explanation: There are both elective and core curricular discussions about the international impact of climate change and health, but this is still far from an in depth discussion in the form of a dedicated lecture on the topic.	

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

10. Does your medical school curriculum address the reproductive health effects of industry-related environmental toxins (e.g. air pollution, pesticides)?	
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.
Note: In the UCSF Life Stages block, there was 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 was followed by two research-driven small groups on the effect of various environmental toxins on fertility and pregnancy.	

Score explanation: There was extensive discussion in Dr. Woodruff's lecture about the effect of environmental exposures to reproductive health.

11. 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.**
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.
Note: The impacts of wildfires on rates of asthma in the Bay Area, particularly in Oakland were discussed as a part of our ABC2 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, led by Dr. Ahimsa Porter Sumchai. In the core curriculum, the importance of green space availability and how many communities in San Francisco are deprived of adequate green space in order to get physically active was discussed by Dr. Michelle Guy as a part of the REGN block.	
Score explanation: Thorough discussion on the environmental challenges faced by the Bayview Hunters-Point community qualifies as an in depth exploration of this topic in the curriculum.	

12. Does your medical school curriculum address the unique climate and environmental health challenges that have impacted and are impacting Indigenous communities?	
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.
Note: The UCSF Native American Health Alliance has aided the University 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. Still, no discussion of the outsized influence of climate change on Indigenous communities is present in the core curriculum.	
Score explanation: Elective work and no mention in the core curriculum earns a score of 1 in this category.	

Curriculum: Sustainability

14. 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.
1	**This topic was covered in elective coursework.**
0	This topic was not covered.
Note: In our Renal, Endocrine, GI, & Nutrition (REGN) block, we had six lectures on nutrition. 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. However, the Earth Health elective had two sessions related to diet and sustainability: "Earth Friendly Nutrition" and "Meat Consumption, Health, and the Environment". The "Frontiers in Medicine: Climate Change" lecture given by Dr. Tom Newman extensively addressed the carbon footprint of different types of food, 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. Discussions during the Inquiry Immersion elective course on climate change also covered the carbon footprints for the manufacturing processes for different food types.	
Score explanation: None of the lectures on nutrition and dieting mentioned sustainability as a factor to consider when choosing a healthy diet. Mentions in CIC and the Earth Health elective earn a score of 1 in this category.	

15. Does your medical school curriculum highlight the waste generated by the healthcare system and identify ways to advocate for and implement sustainable best practices in health care?	
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.
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. Examples of sustainable practices in healthcare are avoiding high impact anesthetics like desflurane and nitrous oxide, offering sustainable and nutritious food in the hospital cafeteria, and reducing unnecessary hospital waste. 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".
Score explanation: Mention in CIC earns a 1.

Curriculum: Clinical Applications

16. 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?	
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.
0	**No, there are not strategies introduced for having conversations with patients about climate change**
Note: UCSF has not offered any education to medical students related to talking to patients who have been affected by climate change.	
Score explanation: No mention	

17. In training for patient encounters, does your medical school's curriculum introduce strategies for taking an environmental history or exposure history?	
2	**Yes, the core curriculum includes strategies for taking an environmental history.**
1	Only elective coursework includes strategies for taking an environmental history.
0	No, the curriculum does not include strategies for taking an environmental history.
Note: 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.	
Score explanation: Small group sessions are a required part of the Bridges Curriculum and a small group session on environmental exposures and an environmental history earns a 2 in this category.	

Curriculum: Administrative Support for Planetary Health

18. Is your medical school currently in the process of improving Education for Sustainable Healthcare (ESH)/planetary health education?	
4	**Yes, the medical school is currently in the process of making major improvements to ESH/planetary health education.**
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.
Note: 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 on the fly. UCSF has been incredibly supportive of student initiatives to change curricular elements in light of this feedback.*	

19. 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	Some planetary health/ESH topics are appropriately integrated into the core medical student curriculum.
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.
Note: The majority of the blocks in the Bridges Curriculum have integrated planetary health themes, including the effect of climate change on infectious disease, mental health, and heat-related illness, and the health effects of air pollution. As described above, students and faculty at UCSF are currently working on a curriculum initiative that would integrate planetary health topics throughout the curriculum.	
Score explanation: The effects of planetary health on health care as a whole and health outcomes in marginalized communities is a topic that is integrated in several blocks of the preclinical curriculum at	

UCSF. Work is ongoing to improve the integration of planetary health topics, earning a 6 in this category.

20. Bonus: Does your medical school have a program that offers incentives for faculty/departments to develop new planetary health/ESH courses and/or incorporate planetary health/ESH into existing courses?	
1*	Yes, the medical school has an incentive program.
0	**No, the medical school does not have an incentive program.**
Note: In 2016, UCSF School of Medicine faculty Dr. Arianne Teherani and Dr. Sheri Weiser have held workshops focused on supporting and connecting faculty across UC who have voluntarily chosen to infuse existing course curriculum across various disciplines with relevant climate and sustainability-related concepts. Those who participate in the training receive a small stipend to help design their teaching material and move their work forward, however this program no longer exists at UCSF.	
Score explanation: Workshops for faculty to incorporate planetary health into existing curriculum elements earns a bonus point in this category.	

Section Total (42 out of 58)	**B+**

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.*

1.Are there researchers engaged in planetary health research and healthcare sustainability research at your medical school?	
4	**Yes, there are faculty members at the School of Medicine who have a primary research focus in planetary health and healthcare sustainability.**
3	Yes, there are faculty members at the School of Medicine who have a primary research focus in planetary health or healthcare sustainability.
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.
Score explanation: Dr. Sheri Weiser has incorporated climate change themes into her research on food insecurity and HIV in Africa. Dr. Seema Gandhi's primary research focus is reducing anesthesia-related GHG emissions and operating room waste.	

2. Is there a dedicated department or institute for interdisciplinary planetary health research at your institution?	
3	**There is at least one dedicated department or institute for interdisciplinary planetary health research.**
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.

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. The new Center for Climate, Health, and Equity has a research pillar which will focus on the health effects of climate change.

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?	
3	**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.**
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.
*Score explanation:*The Community Engagement Core of the EaRTH Center informs all EaRTH Center priorities based on community input through our Stakeholder Advisory Board (SAB). The SAB members represent the environmental health research and education needs of their respective communities.	

4. Does your institution have a planetary health website, or a website centralizing various campus resources related to health and the environment?	
3	**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.**
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 both an Office of Sustainability which contains information about health metrics, ways to get and stay involved, current research projects, as well as green interventions around campus. UCSF also has the EaRTH Center, which is another center dedicated to showcasing upcoming events and opportunities, pilot projects, funding opportunities, and faculty involved within the center.	

5. Has your institution recently hosted a conference or symposium on topics related to planetary health?	
4	**Yes, the institution has hosted more than one conference or symposium on topics related to planetary health in the past year, including at least one on climate change.**
3	Yes, the institution has hosted 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 is currently hosting a community-facing "Mini Medical School for the Public" mini-series called "Environmental Justice and Human Health: Creating Systemic Solutions", which is a set of 6 talks offered every week dealing with how we can create solutions for environmental injustice issues. Two additional Mini Medical Schools for the Public were conducted in 2020 that focused on the intersection of planetary health and patient/population care. UCSF is also currently hosting the EaRTH monthly series, where different faculty members talk about different issues relating to environmental exposures and resulting health complications ("Climate Change & Health"). Additionally, UCSF and Stanford co-hosted the NorCal Symposium on Climate and Pandemic Resilience in Health Care in September 2020.	

6. Has your institution or medical school joined the Planetary Health Alliance and/or the Global Consortium on Climate and Health Education?	
2	**Yes, the medical school has joined the Planetary Health Alliance and/or the Global Consortium on Climate and Health Education.**
1	Yes, the institution has joined the Planetary Health Alliance and/or the Global Consortium on Climate and Health Education, but the medical school specifically has not.
0	No, the institution has not joined the Planetary Health Alliance or the Global Consortium on Climate and Health Education.
Score explanation: UCSF is part of the Global Consortium on Climate & Health Education.	

Section Total (19 out of 19)	**A+**

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.*

1. Does your medical school partner with community organizations to promote planetary and environmental health?	
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	**The institution partners with community organizations, but the medical school is not part of that partnership.**
0	No, there is no such meaningful community partnership.
Score explanation: UCSF works with the San Francisco Department of Public Health which runs the San Francisco Climate and Health plan. Still, neither the University nor the School of Medicine use their platform and powerful advocates locally and nationally to advocate for the environmental health of the communities we serve. For example, when Speaker Pelosi spoke with Chancellor Hawgood about various topics, the issue of the climate emergency was not brought up and she was not asked what the House of Representatives plans to do about our increasingly less habitable planet.	

2. Does your medical school offer community-facing courses or events regarding planetary health?	
3	**The medical school offers community-facing courses or events at least once every year.**
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.

Score explanation: The Health Emergency of Climate Change "Mini Medical School for the Public" lecture series serves as a community resource for members of the community interested in learning more about Climate Change and health. The Office of Sustainability website also features plenty of useful information on the topic.

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	**Students do not regularly receive communications about planetary health or sustainable healthcare.**
Score explanation: UCSF Students do not receive updates and coverage related to University sustainability efforts. This is a huge area of opportunity for UCSF to better inform the community about efforts to achieve the carbon neutrality goal by 2025.	

4. Does the medical school offer continuing medical education (CME) courses that address planetary health and/or sustainable healthcare?	
2	**Yes, multiple in-person or online CME courses relating to planetary health and/or sustainable healthcare are offered, including at least one with a primary focus of planetary health.**
1	Yes, one in-person or online CME course related to planetary health and/or sustainable healthcare is offered.
0	There are no CME courses on planetary health or sustainable healthcare topics.
Example: While there have not been any in-person CME courses related to climate change at UCSF, in March of 2019, 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.	
Score explanation: 2 CME courses are available in the field of planetary health and sustainable healthcare.	

5. Do hospitals affiliated with your medical school have accessible educational materials for patients about environmental health exposures?	
2	**Yes, all affiliated hospitals have accessible educational materials for patients.**
1	Some affiliated hospitals have accessible educational materials for patients.
0	No affiliated medical centers have accessible educational materials for patients.
Score explanation: PRHE works to provide educational materials for patients related to environmental health exposures at all UCSF affiliates including the San Francisco VA and ZSFGH. Home | Program on Reproductive Health and the Environment (ucsf.edu) The Program on Reproductive Health and the Environment (PRHE) 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 here.	

6. Do hospitals affiliated with your medical school have accessible educational materials for patients about climate change and health impacts?	
2	**Yes, all affiliated hospitals have accessible educational materials for patients.**
1	Some affiliated hospitals have accessible educational materials for patients.
0	No affiliated hospitals have accessible educational materials for patients.
Score explanation: UCSF Health, ZSFGH, and the SF VA have educational materials related to climate change. San Francisco Climate and Health Profile (sfclimatehealth.org) 3.7 Greenhouse Gas Emissions and Climate Change (va.gov)	

Section Total (10 out of 14)	**B+**

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?	
2	**Yes, the institution offers grants available to medical students for students to enact sustainability initiatives.**
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.
0	No, the institution does not offer opportunities or support for sustainability initiatives.
Score explanation: UCSF has an **Environmental Scholars Program,** which is a funded ($10,000 stipend), 3-year community-based clinical and research program in environmental health. Each year, the ESP will provide two 1st year medical 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. The UC President's Bonnie Reiss **Carbon Neutrality Student Fellowship Program** funds student-generated projects that support the UC system's goal to produce zero-net greenhouse gas emissions by 2025.	

2. Does your institution offer opportunities for medical students to do research related to planetary health and/or sustainable healthcare?	
3*	**The institution offers an explicit paid fellowship for medical students to do research related to planetary health and/or sustainable healthcare.**
2	The institution offers paid research opportunities for students and planetary health/sustainable healthcare projects would be considered eligible.
1	There are unfunded research opportunities for students to perform research related to planetary health/sustainable healthcare.
0	There are no opportunities for students to receive funding for planetary health/sustainable healthcare research.

Score explanation: Bonus point! UCSF has an **Environmental Scholars Program,** which is a funded ($10,000 stipend), 3-year community-based clinical and research program in environmental health. Each year, the ESP will provide two 1st year medical 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	**The medical school has a webpage 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.**
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: Yes. 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 has specific information about mentors, projects achieved and underway, funding opportunities, and contact information. We also have the new Center for Climate, Health, and Equity focused exclusively on climate change and its impacts on health.	

4. Does your medical school have funded, registered student groups dedicated towards fostering a culture of planetary health engagement, scholarship, and advocacy on campus, supported by faculty advisors?	
2	**Yes, there is a funded student organization with faculty support at my medical school dedicated to planetary health or sustainability in healthcare.**
1	Yes, there is a student organization at my medical school dedicated to planetary health or sustainability in healthcare but it lacks faculty support and/or funding.
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 sustainability best practices?	
1	Yes, there is a student representative that serves on a medical school or institutional decision-making council.
0	**No, there is no such student representative.**
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)	
1	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.
1	**Panels, speaker series, or similar events related to planetary health that have students as an intended audience.**
1	**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.**
1	Cultural arts events, installations or performances related to planetary health that have students as an intended audience.
1	Local volunteer opportunities related to building community resilience to anthropogenic environmental impacts.
1	**Wilderness or outdoors programs (e.g., that organize hiking, backpacking, kayaking, or other outings for students) that follow Leave No Trace principles.**
Score explanation: UCSF is currently hosting an Environmental Justice and Human Health: Creating Systemic Solutions medical school mini-series, which is a set of 6 talks offered every week dealing with how we can create solutions for environmental injustice issues. This is a 6-week series co-organized by the UCSF EaRTH Center, UCSF Program for Reproductive Health and the Environment (PRHE), and San Francisco Bay Physicians for Social Responsibility (PSR) and further supported by the UCSF Center for Climate Health and Equity and the Environmental and Climate Health Student Advisory Group. We also have the Rec Pass, which gives training on wilderness and outdoor programs that follow Leave No Trace principles.	

Section Total (12 out of 15)	A

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	**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.**
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
Score explanation: The Office of Sustainability has input from both the University and health system side with a full time director of the Office.	

2. Does your medical school and/or institution have a stated goal of carbon neutrality by 2050?	
4*	The medical school is already carbon neutral.
3	Yes, there is a stated carbon neutrality goal and the medical school has a well-defined and adequate plan in place to achieve this goal.
2	**Yes, there is a stated carbon neutrality goal, but the medical school has not created a plan to reach that goal or the plan is inadequate.**
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 and information as to progress towards that goal but this progress is not widely disseminated which lowers the urgency of all people working at UCSF to contribute to achieving this goal. UCSF Sustainability | Stay Informed | Carbon Neutral by 2025	

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	Medical school buildings source >20% of energy needs from off-site and/or on-site renewable energy.
0	Medical school buildings source <20% of energy needs from off-site and/or on-site renewable energy.
Score explanation: UCSF sources 97% of its electricity from carbon-free sources. UCSF Sustainability	

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 rating system or sustainable 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	**Sustainable building practices are utilized for new buildings on the medical school campus, but most old buildings have not been retrofitted.**
1	Sustainable building practices are inadequately or incompletely implemented for new buildings.
0	Sustainability is not considered in the construction of new buildings.
Score explanation: There are positive signs that buildings at Mission Bay are leading the way in energy efficiency. For example, the new Precision Cancer Medicine Building was LEED Gold certified in 2020. The University has a goal of meeting LEED Gold certification for all new projects undertaken by the University, and the UC system has a policy of meeting LEED Silver certification for all new constructions. 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 offsets 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 4 hospitals in the country with the designation. https://www.beckershospitalreview.com/lists/28-hospitals-with-gold-or-platinum-leed-certification.html UCSF Sustainability | Review Metrics & Annual Reports | Review Metrics	

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	**The medical school has implemented some strategies to provide environmentally-friendly transportation options, but the options are unsatisfactorily accessible or advertised.**
0	The medical school has not implemented strategies to encourage and provide environmentally-friendly transportation options.
Score explanation: UCSF's carpool program and shuttle system are present but inadequate in reducing the carbon footprint of transportation at UCSF. The goal to electrify the entire fleet of UCSF shuttles by 2025 has made little progress as of the latest report date (2019). The University must move quickly if it is to achieve the 100% electric fleet goal set for 2025. UCSF Sustainability | Review Metrics & Annual Reports | Review Metrics	

6. Does your medical school have an organics recycling program (compost) and a conventional recycling program (aluminum/paper/plastic/glass)?	
2	**Yes, the medical school has both compost and recycling programs accessible to students and faculty.**
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 has a robust recycling and compost program on campus in an attempt to achieve zero-waste.	

7. Does the medical school apply sustainability criteria when making decisions about the campus food and beverage selections?	
3	Yes, the medical school has adequate sustainability requirements for food and beverages 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	**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.**
0	There are no sustainability guidelines for food and beverages.
Score explanation: UCSF has a campus wide goal of sourcing 25% of food from sustainable sources by 2030. This goal has already been exceeded campus-wide and the University sources 31% of its food from sustainable sources. This calls for setting a more ambitious goal so that we do not become complacent with the 25% figure. Evidence of this complacency is that UCSF Health lags well behind the University as a whole with only 12% of procured food being from sustainable sources. Although sourcing of food is important, the types of food served at UCSF can also play a major role in reducing the carbon footprint of the University. For example, reducing the amount of beef purchased by the university for more sustainable meat options like chicken, pork, and fish would dramatically reduce the carbon footprint of UCSF. There are initiatives to reduce the carbon footprint of the food procured at UCSF such as Meatless Mondays. UCSF Sustainability	

8. Does the medical school or associated institution apply sustainability criteria when making decisions about supply procurement?	
3	Yes, the medical school has adequate sustainability requirements for supply procurement and is engaged in efforts to increase sustainability of procurement.
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: The University of California's sustainability procurement guidelines and carbon neutrality goal provide the basic infrastructure and guidance for UCSF to source its materials more sustainably. With that said, UCLA is currently the only UC that has completely switched to non-antibiotic meat procurement. UCSF could help in accelerating the transition towards sustainable food procurement by demanding more sustainable food options in their cafeteria as well as continuing sustainability efforts at UCSF Health such as washable hospital gowns.	

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.
1	**The medical school strongly recommends or incentivizes sustainability measures, but they are not required.**
0	There are no sustainability guidelines for medical school events.

Score explanation: The UCSF office of sustainability publishes guidelines to make campus events more sustainable but does not enforce these guidelines and are published as part of the University's commitment to be zero waste and carbon neutral by 2025.

10. Does your medical school have programs and initiatives to assist with making lab spaces more environmentally sustainable?	
2	**Yes, the medical school has programs and initiatives to assist with making lab spaces more environmentally sustainable.**
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 (where a team of experts will meet with your lab on-site and provide recommendations to reduce the lab's environmental impact and get co-workers engaged, with follow-up visits and a multi-tiered certification awarded) has certified 46 labs at UCSF in meeting environmental and sustainability goals on track to reach carbon neutrality by 2025. More labs should be incentivized to pursue a LivingGreen certification.	

11. Does your institution's endowment portfolio investments include fossil-fuel companies?	
4	**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.**
3	No, the institution is entirely divested from fossil fuels.
2	The institution has partially divested from fossil-fuel companies.
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 in fossil-fuel companies. In May of 2020 the University divested endowment funds from fossil-fuels and re-invested 1 billion dollars into renewable energy. This is a positive change from an investment and a sustainability standpoint. [UC's investment portfolios fossil free; clean energy investments top $1 billion | University of California]	

Section Total (22 out of 29)	**B+**

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 an 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%

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	Grade
Planetary Health Curriculum (30%)	42 / 58 = 72%	B
Interdisciplinary Research (17.5%)	19 / 19 = 100%	A+
Community Outreach and Advocacy (17.5%)	10 / 14 = 71%	B
Support for Student-led Planetary Health Initiatives (17.5%)	12 / 15 = 80%	A-
Campus Sustainability (17.5%)	22 / 29 = 76%	B+
Institutional Grade	**79%**	**B+**