



Planetary Health Report Card (Medicine): *UC Berkeley - UCSF Joint Medical Program (MS/MD)*

Berkeley UCSF
Joint Medical Program

2024-2025 Contributing Team:

- Students: *Philip Shih**, *Alex Ha*
- Faculty Mentors: *Gustavo Valbuena, MD, PhD*, *Jyothi Nagraj Marbin, MD*

*Primary Contact: Philip Shih, philip.shih@ucsf.edu

Land acknowledgment: We acknowledge the Ohlone and Chochenyo people who live in the East Bay and have been here since time immemorial. The Joint Medical Program resides on their land and looks forward to building our solidarity and kinship with native peoples.

Summary of Findings

Overall Grade	A
Curriculum	A-
<p>The Joint Medical Program (JMP) case-based curriculum is driven by student-inquiry and allows for the integration of many concepts of environmental health into the curriculum. Many electives are available via UC Berkeley’s School of Public Health and UCSF School of Medicine that focus on sustainability and planetary health. However, the core curriculum falls short on the impacts of climate change on health & healthcare systems.</p> <p>Recommendations: We recommend continuing to use student working groups to increase coverage of planetary health concepts, especially as they pertain to environmental justice and antiracism, within the Problem-Based Learning (PBL) Curriculum (Core Medical Curriculum) course, Clinical Skills course, and Master’s Seminars infrastructures. Beginning in fall of the 24-25 academic year, a longitudinal curriculum on climate change was implemented.</p>	
Interdisciplinary Research	A+
<p>The JMP is housed within the UC Berkeley’s School of Public Health, which offers many mentorship and financial opportunities for JMP students in pursuit of their Master’s Thesis. In the past two years, there were four completed Master’s Thesis projects related to environmental health; the titles are as follows: 1) OBGYN environmental health knowledge and pesticide exposure screening and counseling of pregnant and breastfeeding farmworkers in California, 2) Community Based Approaches to Tree Planting and Urban Greening in Richmond, CA, 3) Wildfire Smoke Exposure and Acne Clinic Visits in San Francisco, 4) Ambient air pollution is associated with graft failure/death in pediatric liver transplant recipients.</p> <p>Recommendations: We recommend the JMP faculty to continue to encourage students to pursue their research or Master’s Thesis on planetary health.</p>	
Community Outreach and Advocacy	A
<p>JMP students have many opportunities to engage in community outreach and advocacy efforts associated with environmental justice through community partnerships with local sustainability stakeholders in Berkeley. In addition, the UC Berkeley’s School of Public Health offers many community advocacy opportunities related to planetary health.</p> <p>Recommendations: Environmental justice advocacy opportunities and sustainability updates should be regularly included in the weekly Berkeley Public Health Digest and JMP newsletter.</p>	
Support for Student-Led Initiatives	A+
<p>The JMP, UC Berkeley, and UCSF community offers institutional support for student-led planetary health initiatives, including funding, fellowships, and programming. JMP students can receive funding for planetary health projects via UC Berkeley’s Green Initiative Fund at UC Berkeley, UCSF’s Environmental Research and Translation for Health (EaRTH), and many more. Since last year, a formal JMP student liaison position dedicated to curriculum reform and sustainability best practices was developed.</p> <p>Recommendations: We recommend a funded and faculty-mentored student organization within the JMP dedicated to planetary health and sustainability.</p>	
Campus Sustainability	A
<p>UC Berkeley & UCSF have pledged to emit net zero greenhouse gasses from carbon emission sources by 2025. These campuses also have an Office of Sustainability focused on green energy, utilities, infrastructure, and food.</p> <p>Recommendations: The Office of Sustainability at UC Berkeley and UCSF should engage in efforts to increase</p>	

food and beverage sustainability. The JMP should also require sustainability measures, possibly using UC Berkeley's green event resources for events.

Statement of Purpose

Planetary health is human health.

The Planetary Health Alliance describes planetary health as “a solutions-oriented, transdisciplinary field and social movement focused on analysing 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, urbanisation, 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 colour, 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 health professional schools, we have created a Planetary Health Report Card that students internationally can use to grade and compare their institutions on an annual basis. This student-driven initiative aims to compare health professional 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 centred 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.
- **Sustainable Healthcare:** As defined by the Academy of Royal Colleges, sustainable healthcare involves ensuring the ability to provide good quality care for future generations by balancing the economic, environmental, and social constraints and demands within health care settings. A sustainable healthcare system maintains population health, reduces disease burden and minimises use of healthcare services.
- **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/Department vs. Institution:** When “Medical school” is specified in the report card, this only refers to curriculum and resources offered by the School/department of Medicine and does not include offerings from other parts of the university (e.g. undergraduate departments (USA), other related departments (e.g. Public Health, Population Health departments). In contrast, when “institution” is specified in the report card, we are referring to the university more broadly including all of its campuses. 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 students 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 mould 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. Please be as specific as possible when providing evidence for this metric.
- **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.
- **Core Curriculum:** This refers to taught material that is delivered to the entire cohort of students in one year.
- **Clerkship / Outreach:** 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, outreach or placements. This is a relatively short (approximately 4-8 weeks) period of study and patient-centred clinical experience that takes place as part of the undergraduate programme.
- **Clinical rotation:** This is a term used to refer to placements that students go on (e.g., ophthalmology, surgery, cardiology).
- **Physiotherapy vs Physical Therapy:** For the purposes of this report card these terms are considered interchangeable. However, physiotherapy will be used primarily.
- **Community organisations:** For most institutions, there are existing groups that are not directly affiliated with the university and exist as a product of what the community the institution exists in cares about or needs. These specific community organisations relevant to this report include those that are focused around some aspect of climate and health preservation. These community organisations can include but are not limited to local mutual aid initiatives, underserved-resource distribution groups, clean-up and nature conservation groups, community gardeners, and other environmental-related organisations. If your institution does not have access to local volunteerships with community groups, please report any community organisations your institution or school has collaborated with.
- **Climate justice:** The idea that certain population groups and geographical locations which are disproportionately more impacted by climate change are already economically and socially disadvantaged. This double vulnerability sits alongside pre-existing social justice concerns and should therefore shift policy and practice to mitigate the inequitable effects of the climate crisis.
- **Extractivism:** The removal of natural resources typically in large quantities. Within anthropology this term is often used in the context of colonialism to refer to the

historic seizing of natural resources, a practice which has developed business models tied to ecological degradation and loss of biodiversity.

- **Global South:** Nations that often have less economic and industrial development and are typically in the southern hemisphere. These nations have been found to be disproportionately impacted by the climate crisis.
- **Low socioeconomic status (SES):** An individual or geographical area that across a variety of socioeconomic factors (e.g., income, education, race/ethnicity) is considered vulnerable. This vulnerability has been correlated to more adverse health outcomes often as a consequence of encountering more barriers in accessing and receiving healthcare.
- **Low and Middle-Income Countries (LMIC):** Countries that have lower degrees of economic affluence.
- **Anthropogenic:** Created through human activity
- **Marginalized communities:** Groups excluded from mainstream economic, educational, social, and/or cultural experiences due to race, gender identity, sexual orientation, age, physical ability, language, and/or immigration status (Sevelius et al., 2020).

Other considerations:

- If there are more than one “tracks” at your institution 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 examples). Where possible please indicate the proportion of students that are on each track.

Completed in 2022 a [Literature Review by Metric](#) is available for the 2022 medicine report card metrics. We are in the process of updating this review and making it more applicable to all the disciplines. However the review serves as a rough 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

1.1. Did your <u>medical school</u> offer elective courses (student selected modules) to engage students in Education for Sustainable Healthcare or Planetary Health in the last year?	
Yes, the medical school has offered more than one elective whose primary focus is ESH/planetary health in the past year. (3 points)	
Yes, the medical school has offered one elective whose primary focus is ESH/planetary health in the past year. (2 points)	
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. (1 points)	
No, the medical school has not offered any electives on planetary health or electives that include ESH/planetary health topics in the past year. (0 points)	
Score Assigned:	3
<p><i>Score explanation: JMP students are able to take UC Berkeley graduate-level courses in any discipline as electives. The UC Berkeley School of Public Health offers at least 1 environmental health science course every semester.</i></p> <p><i>JMP students can also take electives at UCSF. This includes the UCSF student-led ESH/planetary health electives: 1. Earth Health, 2. Women's Health, Environment, and Health Professional Activism, and 3. Rethinking Farm-Food-Health-Climate Connections.</i></p>	

Curriculum: Health Effects of Climate Change

1.2. Does your <u>medical school</u> curriculum address the relationship between extreme heat, health risks, and climate change?	
This topic was explored in depth by the core curriculum. (3 points)	
This topic was briefly covered in the core curriculum. (2 points)	
This topic was covered in elective coursework. (1 point)	

This topic was not covered. (0 points)	
Score Assigned:	3
<p><i>Score explanation: The relationship between extreme heat, climate change, and health risks are covered in-depth in the core curriculum. Students at the JMP create their own learning objectives for the Problem-Based Learning (PBL) Curriculum (Core Medical Curriculum), so the health effects of climate change have been discussed in our classes. Furthermore, there is a 3-day patient case on a patient who suffers from health complications due to extreme heat. Global warming and climate change has been tied to causes of dehydration and electrolyte imbalances in relevant PBL cases.</i></p>	

1.3. Does your <u>medical school</u> curriculum address the impacts of extreme weather events on individual health and/or on healthcare systems?	
This topic was explored in depth by the core curriculum. (3 points)	
This topic was briefly covered in the core curriculum. (2 points)	
This topic was covered in elective coursework. (1 point)	
This topic was not covered. (0 points)	
Score Assigned:	3
<p><i>Score explanation: The core curriculum addresses the impacts of extreme weather events, such as hurricanes and wildfires, on health and/or healthcare systems. There are also elective courses, such as, GEOG 149B: Climate Impacts and Risk Analysis and ESPM C22AC: Fire: Past, Present and Future Interactions with the People and Ecosystems of California, that cover these topics.</i></p>	

1.4. Does your <u>medical school</u> curriculum address the impact of climate change on the changing patterns of infectious diseases?	
This topic was explored in depth by the core curriculum. (3 points)	
This topic was briefly covered in the core curriculum. (2 points)	
This topic was covered in elective coursework. (1 point)	
This topic was not covered. (0 points)	
Score Assigned:	3
<p><i>Score explanation: In the PBL Curriculum (Core Medical Curriculum), JMP students have incorporated the effects of climate change on mosquito-borne diseases into group discussions and have developed related learning objectives. Our Associate Dean for Regional Campuses at the UCSF School of Medicine, Dr. Peter Chin-Hong, is an infectious disease physician who has also presented several times to the JMP on the changing dynamics of infectious diseases in the context of climate change, titled "Climate change and infectious diseases". Additionally, the UC Berkeley</i></p>	

School of Public Health offers graduate courses in this topic (e.g. PB HLTH 273: Environmental Determinants of Infectious Disease) that JMP students are able to take as electives.

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

This topic was explored **in depth** by the **core** curriculum. (3 points)

This topic was **briefly** covered in the **core** curriculum. (2 points)

This topic was covered in **elective** coursework. (1 point)

This topic was **not** covered. (0 points)

Score Assigned:

3

Score explanation: In the JMP Problem-Based Learning (PBL) Curriculum (Core Medical Curriculum), there is a 3-day case that covers a patient who grew up in the Iron Triangle in Richmond and was diagnosed with a respiratory condition. Students discussed this topic and developed testable learning objects around the respiratory health effects of climate change. In the JMP Clinical Skills course, asthma was also extensively discussed as being more prevalent in certain areas where redlining occurred and where there are high rates of air pollution.

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

This topic was explored **in depth** by the **core** curriculum. (3 points)

This topic was **briefly** covered in the **core** curriculum. (2 points)

This topic was covered in **elective** coursework. (1 point)

This topic was **not** covered. (0 points)

Score Assigned:

3

Score explanation: Score explanation: Students at the JMP have explored the relationship between cardiovascular disease and climate change in the core curriculum, specifically during a Problem-Based Learning (PBL) case examining a patient with heart failure and heat exhaustion during the summer, addressing topics like electrolyte imbalances and hypertension. Furthermore, UC Berkeley offers courses which address extreme heat and its effects on cardiovascular health. These courses include GEOG 149B: Climate Impacts and Risk Analysis and PB HLTH C271G: Health Implications of Climate Change.

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

This topic was explored **in depth** by the **core** curriculum. (3 points)

This topic was **briefly** covered in the **core** curriculum. (2 points)

This topic was covered in **elective** coursework. (1 point)

This topic was **not** covered. (0 points)

Score Assigned:

2

Score explanation: Students at the JMP have explored the relationship between mental health or neuropsychological effects of environmental degradation and climate change in the core curriculum through student-directed learning objectives (LOs). Additionally, UC Berkeley offers classes on climate change and mental health which JMP students can take as their electives, including a course called SOCIOL 137AC/ESPM 163AC: Environmental Justice: Race, Class, Equity, and the Environment.

1.8. Does your medical school curriculum address the relationships between health, individual patient food and water security, ecosystem health, and climate change?

This topic was explored **in depth** by the **core** curriculum. (3 points)

This topic was **briefly** covered in the **core** curriculum. (2 points)

This topic was covered in **elective** coursework. (1 point)

This topic was **not** covered. (0 points)

Score Assigned:

2

Score explanation: The JMP Problem-Based Learning core curriculum has addressed the relationship between food/water security, food systems, and climate change through discussion regarding climate change's effects on the prevalence of food and water insecurity. Students are also able to take relevant elective courses, such as PB HLTH 206D: Food and Nutrition Programs and Policies in Developing Countries, GEOG 130: Food and the Environment, and ESPM 226: Interdisciplinary Food and Agriculture Studies.

1.9. Does your medical school curriculum address the outsized impact of climate change on marginalised populations such as those with low SES, women, communities of colour, Indigenous communities, children, homeless populations, and older adults?

This topic was explored **in depth** by the **core** curriculum. (3 points)

This topic was **briefly** covered in the **core** curriculum. (2 points)

This topic was covered in elective coursework. (1 point)	
This topic was not covered. (0 points)	
Score Assigned:	3
<p><i>Score explanation: In the JMP Problem-Based Learning (PBL) Curriculum (Core Medical Curriculum), there is a 3-day case that covers a patient who grew up in the Iron Triangle in Richmond (an area of predominantly African Americans and Latinos) and was diagnosed with a respiratory condition. Students discussed how air pollution caused by climate change and other environmental injustices can affect historically marginalized communities, especially those living in redlined communities. Students are also eligible to take courses offered by the UC Berkeley School of Public Health, including ESPM 163AC/SOCIAL 137AC: Environmental Justice: Race, Class, Equity, and the Environment and PB HLTH C271G: Health Implications of Climate Change.</i></p>	

1.10. Does your <u>medical school</u> curriculum address the unequal regional health impacts of climate change globally?	
This topic was explored in depth by the core curriculum. (3 points)	
This topic was briefly covered in the core curriculum. (2 points)	
This topic was covered in elective coursework. (1 point)	
This topic was not covered. (0 points)	
Score Assigned:	3
<p><i>Score explanation: Dr. Peter Chin-Hong, the Associate Dean for Regional Campuses at the UCSF School of Medicine, has presented several times on infectious diseases for the JMP. As an infectious disease physician, he explained the unequal distribution of infectious diseases, including COVID-19 and other diseases carried by mosquitoes, as a result of climate change. In addition, in the JMP Problem-Based Learning (PBL) Curriculum (Core Medical Curriculum), students have discussed in-depth how infectious diseases are more prominent in warmer regions closer to the equator in a case on tropical and vector-borne diseases (leishmaniasis, malaria, dengue).</i></p>	

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

1.11. Does your <u>medical school</u> curriculum address the reproductive health effects of industry-related environmental toxins (e.g. air pollution, pesticides)?	
This topic was explored in depth by the core curriculum. (3 points)	
This topic was briefly covered in the core curriculum. (2 points)	
This topic was covered in elective coursework. (1 point)	
This topic was not covered. (0 points)	
Score Assigned:	3

Score explanation: There is an OBGYN case where students did a deep dive into the effects of environmental toxins on reproductive health, including perinatal and neonatal health. JMP students can also take elective courses offered by the UC Berkeley School of Public Health focused on reproductive health effects and environmental toxins, including ESPM C148: Pesticide Chemistry and Toxicology and PBHLTH 210D: Reproductive and Perinatal Epidemiology. JMP students can also take elective courses at UCSF, such as the Environmental Health and Health Professional Activism Elective, which includes a lunch talk from Dr. Santosh Pandipati on how the climate crisis impacts reproductive justice.

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

This topic was explored **in depth** by the **core** curriculum. (3 points)

This topic was **briefly** covered in the **core** curriculum. (2 points)

This topic was covered in **elective** coursework. (1 point)

This topic was **not** covered. (0 points)

Score Assigned:

3

Score explanation: The JMP Problem-Based Learning (PBL) Curriculum (Core Medical Curriculum), has a 3-day case that covers a patient who grew up in the Iron Triangle and was diagnosed with a respiratory condition. In that same case, students can explore environmental injustices in Richmond, CA and in other industries within California in their learning objectives. Students may also take elective courses offered by the UC Berkeley School of Public Health concerning environmental threats; these courses include ESPM C46: Climate Change and the Future of California and ENERES 171: California Water.

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

This topic was explored **in depth** by the **core** curriculum. (3 points)

This topic was **briefly** covered in the **core** curriculum. (2 points)

This topic was covered in **elective** coursework. (1 point)

This topic was **not** covered. (0 points)

Score Assigned:

2

Score explanation: The importance of indigenous knowledge and value systems are mentioned briefly at the beginning of each core curriculum class. In problem-based learning, the JMP students begin each case with land acknowledgment slides and updated information on local indigenous movements and organizations which currently play a vital role in planetary health solutions. Students read about these movements and organizations before sharing their thoughts

and experiences in a group. Students are also invited to explore indigenous views on gender identity and land tax, among others, in some PBL cases.

1.14. Does your medical school curriculum address the outsized impact of anthropogenic environmental toxins on marginalised populations such as those with low SES, women, communities of colour, children, homeless populations, Indigenous populations, and older adults?

This topic was explored **in depth** by the **core** curriculum. (3 points)

This topic was **briefly** covered in the **core** curriculum. (2 points)

This topic was covered in **elective** coursework. (1 point)

This topic was **not** covered.

Score Assigned:

3

Score explanation: The JMP Problem-Based Learning (PBL) Curriculum (Core Medical Curriculum) has a 3-day case that covers a patient from the Iron Triangle in Richmond and was diagnosed with a respiratory condition. In this case, students discussed in-depth the effects of oil refineries and air pollution on low SES women of color, especially migrant workers, such as our patient. In addition, students are eligible to take courses offered by the UC Berkeley School of Public Health, including ESPM 163AC/SOCIAL 137AC: Environmental Justice: Race, Class, Equity, and the Environment and PB HLTH C271G: Health Implications of Climate Change.

Curriculum: Sustainability

1.15. Does your medical school curriculum address the environmental and health co-benefits of a plant-based diet?

This topic was explored **in depth** by the **core** curriculum. (3 points)

This topic was **briefly** covered in the **core** curriculum. (2 points)

This topic was covered in **elective** coursework. (1 point)

This topic was **not** covered. (0 points)

Score Assigned:

1

Score explanation: JMP students do not learn about the environmental and health co-benefits of a plant-based diet in the core curriculum. However, JMP students are eligible to take UC Berkeley master's courses as electives, such as NUSCTX 161A/B: Medical Nutrition Therapy I/II. There is room in certain PBL cases, such as the Ladislav Hubenak case, to describe health benefits of plant-based diets.

1.16. Does your <u>medical school</u> curriculum address the carbon footprint of healthcare systems?	
This topic was explored in depth by the core curriculum. (3 points)	
This topic was briefly covered in the core curriculum. (2 points)	
This topic was covered in elective coursework. (1 point)	
This topic was not covered. (0 points)	
Score Assigned:	1
<i>Score explanation: Although JMP students do not address the carbon footprint of healthcare systems in the core curriculum, UC Berkeley offers an elective course available to JMP students related to carbon footprint of the healthcare systems called ESPM 250: Special Topics in Environmental Science, Policy, and Management: Sustainable Industry.</i>	

1.17. Does your <u>medical school</u> curriculum cover these components of sustainable clinical practice in the <u>core</u> curriculum? (points for each)	Score
The health and environmental co-benefits of avoiding over-medicalisation, over-investigation and/or over-treatment (2 points)	2
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 fulfil this metric. (2 points) .	2
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. This is commonly known as social prescribing in the UK. (1 point)	1
Environmental impact of surgical healthcare on planetary health and the climate crisis, and how can it be mitigated. (1 point)	0
The impact of anaesthetic gases on the healthcare carbon footprint and ways to reduce anaesthesia's environmental impacts, such as total intravenous anaesthesia or choosing less environmentally harmful anaesthetic gas options with reduced greenhouse gas emissions. (1 point)	0
The impact of inhalers on the healthcare carbon footprint and the environmental benefit of dry powdered inhalers over metered dose inhalers. (1 point)	0
Waste production within healthcare clinics and strategies for reducing waste in clinical activities (e.g. single use items in the inpatient or outpatient setting) (1 point)	1
<i>Score explanation: In PBL cases, exercising in greenspaces is often discussed as first-line over prescribing medications. Students discussed how over-medicalization could lead to long-term poorer outcomes for patients. In the Clinical Skills core curriculum, JMP students are taught to reduce waste during our encounters with our standardised patients and during our preceptorships</i>	

in an inpatient or outpatient setting. For example, we only wear gowns when it is necessary in the clinic, and we make sure to reuse the gowns during practice with our standardised patients.

Curriculum: Clinical Applications

1.18. 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?

Yes, there are strategies introduced for having conversations with patients about climate change in the **core** curriculum. (2 points)

Yes, there are strategies introduced for having conversations with patients about climate change in **elective** coursework. (1 points)

No, there are **no** strategies introduced for having conversations with patients about climate change. (0 points)

Score Assigned:

2

Score explanation: There is a "Environmental and Occupational Hazards" lecture as part of the Clinical Skills curriculum to have conversation with patients about health effects of climate change, air pollution, and occupational exposures. This is followed by standardized patient sessions when students can practice these skills.

1.19. In training for patient encounters, does your medical school's curriculum introduce strategies for taking an environmental history or exposure history?

Yes, the **core** curriculum includes strategies for taking an environmental history. (2 points)

Only **elective** coursework includes strategies for taking an environmental history. (1 point)

No, the curriculum does **not** include strategies for taking an environmental history. (0 points)

Score Assigned:

2

Score explanation: The JMP does offer strategies for taking an environmental history, including the importance of including the occupational history and lifecourse into the social and ancestral history were briefly discussed in the Clinical Skills core curriculum. During standardized patient encounters, students are encouraged to ask about place of residence and work history to capture environmental and occupational exposures.

Curriculum: Administrative Support for Planetary Health

1.20. Is your medical school currently in the process of implementing or improving Education for Sustainable Healthcare (ESH)/planetary health education?

Yes, the medical school is currently in the process of making **major** improvements to ESH/planetary health education. (4 points)

Yes, the medical school is currently in the process of making **minor** improvements to ESH/planetary health education. (2 points)

No, there are **no** improvements to planetary health education in progress. (0 points)

Score Assigned:

2

Score explanation: The Joint Medical Program executive team created and implemented a longitudinal health systems and health policy curriculum that includes ESH/planetary health education. They will continue to revise and update as necessary.

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

Planetary health/ESH topics are **well integrated** into the core medical school curriculum. (6 points)

Some planetary health/ESH topics are appropriately integrated into the core medical student curriculum. (4 points)

Planetary health/ESH is not integrated and is primarily addressed in **(a) standalone lecture(s)**. (2 points)

There is **minimal/no** education for sustainable healthcare. (0 points)

Score Assigned:

6

Score explanation: In the current Problem-Based Learning core curriculum, JMP students create their own learning objectives ranging from pathophysiology objectives or social science objectives. For these social science learning objectives, students are required to investigate and discuss climate change and environmental hazards and their effects on population and individual health in at least 2 out of the 7 cases per unit.

1.22. 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?

Yes, the medical school has a specific faculty/staff member responsible for overseeing curricular integration of planetary health and sustainable healthcare. (1 point)

No, the medical school does not have a specific faculty/staff member responsible for overseeing curricular integration of planetary health and sustainable healthcare. (0 points)

Score Assigned:

1

Score explanation: JMP faculty members, Dr. Jyothi Marbin and Dr. Gustavo Valbuena, are working together on a longitudinal climate change curriculum and oversee the curricular integration of planetary health and sustainable healthcare.

Section Total (60 out of 72)

83%

Back to Summary Page [here](#)

Interdisciplinary Research

Section Overview: *This section evaluates the quality and quantity of interdisciplinary planetary health research at the 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, institutions 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 emphasised.*

2.1. Are there researchers engaged in planetary health research and healthcare sustainability research at your <u>institution</u>?	
Yes, there are faculty members at the institution who have a primary research focus in planetary health or sustainable healthcare/vetcare. (3 points)	
Yes, there are individual faculty members at the institution who are conducting research related to planetary health or healthcare sustainability, OR are part of a national/international sustainability working group, but it is not their primary research focus. (2 points)	
There are sustainability researchers at the institution , but not specifically associated with healthcare/vetcare. (1 point)	
No, there are no planetary health and/or sustainability researchers at the institution at this time. (0 points)	
Score Assigned:	3
<p><i>Score explanation: The UC Berkeley School of Public Health has a Environmental Health Sciences Division that trains future leaders to tackle public health threats from environmental exposures. UC Berkeley also has various environmental science groups on campus, including the Environmental Science, Policy, and Management (ESPM), Energy and Research Group, Center for Law, Energy, and the Environment, CERCH, Bixby Center for Population, Health and Sustainability, and Center for Occupational and Environmental Health. JMP students can take elective courses taught by faculty members in any of these groups and can also work with these faculty members as their Principal Investigators for their master's work.</i></p>	

2.2. Is there a dedicated department or institute for interdisciplinary planetary health research at your <u>institution</u>?	
There is at least one dedicated department or institute for interdisciplinary planetary health research. (3 points)	
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. (2 points)	

There is an Occupational and Environmental Health department , but no interdisciplinary department or institute for planetary health research. (1 points)	
There is no dedicated department or institute. (0 points)	
Score Assigned:	3
<p><i>Score explanation: The UC Berkeley School of Public Health has a Environmental Health Sciences Division that researchers how environmental exposures, such as industrialization, unplanned urbanization, effects of climate change and microbial and chemical contamination of water, and air and food, can affect human populations, especially communities that are most vulnerable or oppressed. Information on faculty, coursework, and areas of distinction within the Environmental Health Sciences Division can be found here.</i></p>	

2.3. 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 institution?	
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. (3 points)	
Yes, there is a process in which community members impacted by climate and environmental injustice advise the climate + environmental research agenda. (2 points)	
No , but there are current efforts to establish a process for community members to advise or make decisions on the research agenda. (1 points)	
There is no process, and no efforts to create such a process. (0 points)	
Score Assigned:	3
<p><i>Score explanation: According to the Berkeley Compendium of EHS Expertise, Berkeley's curriculum under the area of agriculture, food systems, and health are engaged with local and international partners in order to better understand and respond to the health challenges of establishing sustainable agriculture and food systems globally, thus allowing community members a space at the table to discuss the climate and environmental research agenda. In addition, the Berkeley Center for Environmental Research and Children's Health (CERCH) engages communities to inform study design, implementation, as well as key solutions to toxic environmental exposures for pregnant individuals who are assigned-female-at-births and their children.</i></p>	

2.4. Does your <u>institution</u> have a planetary health website that centralises ongoing and past research related to health and the environment?	
There is an easy-to-use, adequately comprehensive website that centralises 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. (3 points)	

There is a website that attempts to centralise various campus resources related to health and the environment, but it is hard-to-use, not updated, or not adequately comprehensive. (2 points)	
The institution has an Office of Sustainability website that includes some resources related to health and the environment. (1 point)	
There is no website. (0 points)	
Score Assigned:	3
<i>Score explanation: The UC Berkeley Office of Sustainability and the School of Public Health Environmental Health Sciences Division are easily accessible websites that include information on upcoming events, leaders, and funding related to planetary health.</i>	

2.5. Has your <u>institution</u> recently hosted a conference or symposium on topics related to planetary health?	
Yes, the institution has hosted at least one conference or symposium on topics related to planetary health in the past year. (4 points)	
Yes, the institution has hosted at least one conference or symposium on topics related to sustainable healthcare/vetcare in the past year. (3 points)	
Yes, the institution has hosted a conference on topics related to planetary health / sustainable healthcare/vetcare in the past three years. (2 points)	
The institution has not hosted any conferences directly, but they have provided financial support for a local planetary health event. (1 point)	
No, the institution has not hosted a conference on topics related to planetary health in the past three years. (0 points)	
Score Assigned:	4
<i>Score explanation: Every year, the JMP hosts a research symposium for JMP students to present their master's work. This past year, a third-year student conducted research on the association of air pollution and graft failure in pediatric liver transplant patients and presented during Master's Thesis symposium. In addition to this specific JMP research symposium, the School of Public Health annually hosts the Environmental Health Sciences Symposium, which JMP students can also participate in.</i>	

2.6. Is your <u>institution</u> a member of a national or international planetary health or ESH/ESV organisation?	
Yes, the institution is a member of a national or international planetary health or ESH/ESV organisation. (1 points)	
No, the institution is not a member of such an organisation. (0 points)	

Score Assigned:	1
<i>Score explanation: The UC Berkeley-UCSF Joint Medical Program is listed as a member of the Global Consortium on Climate and Health Education.</i>	

Section Total (17 out of 17)	100%
-------------------------------------	-------------

Back to Summary Page [here](#)

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 colour. 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.*

3.1. Does your <u>institution</u> partner with community organisations to promote planetary and health?	
Yes, the institution meaningfully partners with multiple community organisations to promote planetary and environmental health. (3 points)	
Yes, the institution meaningfully partners with one community organisation to promote planetary and environmental health. (2 points)	
The institution does not partner with community organisations, but has participating in community focused events relating to planetary health. (1 point)	
No, there is no such meaningful community partnership. (0 points)	
Score Assigned:	3
<p><i>Score explanation: The School of Public Health and a few JMP faculty include professors who work on community-based participatory research projects in partnership with community organizations. For instance, Janet Perlman, one of JMP's preceptor and faculty members, is involved with the Medical Society Consortium on Climate and Health, Physicians for Social Responsibility, and the American Academy of Pediatrics on climate change issues. In addition to faculty and staff members engaging with various community organizations to promote planetary and environmental health, JMP students and graduates are also involved with community organizations, including Christina Chen who collaborated Sunrise Movement Bay Area for her thesis project on environmental activism and mental health; Raj Fadadu, who is Founder/Director of the Environmental Health Working Group of the Berkeley Climate Action Coalition; and Sarah Schear, who is Advocacy Co-Chair of Medical Students for a Sustainable Future, Co-Chair of the AAPCAI Climate Change and Health Task Force, co-founder of Climate Health Now, incoming Student Board Member of Physicians for Social Responsibility - Bay Area, and a member of Sunrise Movement Bay Area.</i></p>	

3.2. Does your <u>institution</u> offer community-facing courses or events regarding planetary health?	
The institution offers community-facing courses or events at least once every year. (3 points)	

The **institution** offers courses or events open to the community at least once per year, but they are not primarily created for a community audience. (2 points)

The **institution** has promoted community-facing courses or events, but was not involved in planning those courses or events. (1 point)

The **institution/medical school** have not offered such community-facing courses or events. (0 points)

Score Assigned:

3

Score explanation: The UC Berkeley [Center for Occupational and Environmental Health](#) offers community-facing courses on environmental health, including recognition, management, and reporting of pesticide illness. The UC Berkeley [School of Public Health](#) also has many events throughout the month that are focused on various topics, including food systems, sustainability, and air pollution.

3.3. Does your institution have regular coverage of issues related to planetary health and/or sustainable healthcare in university update communications?

Yes, all students **regularly** receive communication updates dedicated to planetary health and/or sustainable healthcare. (2 points)

Yes, planetary health and/or sustainable healthcare topics are regularly included in communication updates to **some courses**. (1 point)

Students **do not** receive communications about planetary health or sustainable healthcare. (0 points)

Score Assigned:

1

Score explanation: Planetary health and sustainable healthcare are sometimes included in the weekly Joint Medical Program newsletter; the monthly Berkeley Graduate Division newsletter; and the monthly Berkeley Public Health research newsletter.

3.4. 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?

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. (2 points)

Yes, the **institution** or **main affiliated hospital trust** offers one course relating to planetary health and/or sustainable healthcare for post-graduate provider. (1 point)

There are **no** such accessible courses for post-graduate providers. (0 points)

Score Assigned:	2
<p><i>Score explanation: UCSF offers Continuing Medical Education (CME), which are educational opportunities for health care professionals to improve their practices through a comprehensive selection of continuing education activities. UCSF hosted a CME conference called the “Vulnerable Workers and Communities at Environmental Risk and Updates in Occupational and Environmental Medicine” and has an online module called the “Clinician Climate and Health Training” that offers three 20-minute modules on the links between climate change and health. Previous UCSF CME courses can be viewed here.</i></p>	

<p>3.5. Does your <u>institution</u> or its <u>affiliated teaching hospitals</u> have accessible educational materials for patients about environmental health exposures?</p>	
<p>Yes, the medical school or all affiliated hospitals have accessible educational materials for patients. (2 points)</p>	
<p>Some affiliated hospitals have accessible educational materials for patients. (1 point)</p>	
<p>No affiliated medical centres have accessible educational materials for patients. (0 points)</p>	
Score Assigned:	2
<p><i>Score explanation: UCSF’s Program on Reproductive Health and the Environment provides educational brochures for patients about toxic exposures, foods, and occupation: https://prhe.ucsf.edu/info.</i></p>	

<p>3.6. Does your <u>institution</u> or its <u>affiliated teaching hospitals</u> have accessible educational materials for patients about the health impacts of climate change?</p>	
<p>Yes, the medical school or all affiliated hospitals have accessible educational materials for patients. (2 points)</p>	
<p>Some affiliated hospitals have accessible educational materials for patients. (1 point)</p>	
<p>No affiliated hospitals have accessible educational materials for patients. (0 points)</p>	
Score Assigned:	2
<p><i>Score explanation: The UCSF Health system offers accessible educational workshops and materials on climate change and health impacts on the San Francisco Climate and Health Program website.</i></p>	

Section Total (13 out of 14)	93%
-------------------------------------	------------

Back to Summary Page [here](#)

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.*

4.1. Does your **institution** offer support for students interested in enacting a sustainability initiative/QI project?

Yes, the **institution** *either* offers grants for students to enact sustainability initiatives/QI projects *or* sustainability QI projects are part of the core curriculum. (2 points)

The **institution** encourages sustainability QI projects (to fulfil 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. (1 point)

No, **neither** the medical school or the institution offer opportunities or support for sustainability initiatives or QI projects. (0 points)

Score Assigned:

2

Score explanation: The [Green Initiative Fund](#) is UC Berkeley's Campus Green Fund. TGIF provides funding, via grants, for projects that improve and support UC Berkeley's campus sustainability efforts focused on various topics, including transportation, energy, restoration habitat, and environmental and food justice.

4.2. Does your **institution** offer opportunities for students to do research related to planetary health and/or sustainable healthcare/vetcare?

The **institution** has a **specific** research program or fellowship for students interested in doing planetary health/sustainable healthcare/vetcare research. (2 points)

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. (1 point)

There are **no opportunities** for students to engage in planetary health/sustainable healthcare research. (0 points)

Score Assigned:

2

Score explanation: The UCSF Environmental Research and Translation for Health (EaRTH) offers funding opportunities related to planetary health and sustainable healthcare students that are available to the JMP: <https://earth.ucsf.edu/funding>. In addition to the EaRTH fellowship, the University of California's [Carbon Neutrality Initiative](#) offers the following year-long paid

fellowships to which all UC students can apply: the [Carbon Neutrality Initiative Fellowships](#) and the [Global Food Initiative Fellowships](#).

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

The institution has a webpage with specific information related to planetary health or sustainable healthcare/vetcare that includes up-to-date information on relevant initiatives and contact information of potential mentors. (2 points)

There is an institution webpage that features some information on projects and mentors within planetary health and sustainable healthcare within the medical school, but it lacks key information. (1 point)

There is **no institution** specific webpage for locating planetary health and/or sustainable healthcare projects or mentors. (0 points)

Score Assigned:

2

Score explanation: The [UC Berkeley Bixby Center for Population, Health, and Sustainability's Planetary Health](#) website provides accurate information on current projects, initiatives, and mentors. Furthermore, there is an updated [directory](#) that provides contact information for current faculty, staff, and students at UC Berkeley.

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

Yes, there is a student organisation **with faculty support** at my medical school dedicated to planetary health or sustainability in healthcare. (2 points)

Yes, there is a student organisation at my medical school dedicated to planetary health or sustainability in healthcare but it **lacks faculty support**. (1 point)

No, there is **not** a student organisation at my institution dedicated to planetary health or sustainability in healthcare. (0 points)

Score Assigned:

2

Score explanation: There are various organizations throughout UC Berkeley focused on planetary health or sustainability in healthcare, but most of them are student-driven and lack faculty support. Currently, there is no funding and faculty mentored student organization within the JMP dedicated to planetary health and sustainability. An example is [Health Students for Climate Action \(HEALS-CA\)](#), which were previously led by JMP students. HEALS-CA aims to advocate for urgent policy solutions, transform educational institutions, and foster collaborative learning to mitigate climate change and its health harms while developing climate justice leaders in public health.

4.5. Is there a student liaison representing sustainability interests who serves on a <u>department or institutional</u> decision-making council to advocate for curriculum reform and/or sustainability best practices?	
Yes, there is a student representative that serves on a department or institutional decision-making council/committee. (1 points)	
No, there is no such student representative. (0 points)	
Score Assigned:	1
<i>Score explanation: The JMP has a student liaison representing sustainability interests to advocate for curriculum reform or sustainability best practices.</i>	

4.6. In the past year, has the <u>institution</u> had one or more co-curricular planetary health programs or initiatives in the following categories? (1 point each)	Score
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 organise hiking, backpacking, kayaking, or other outings for students)	1
<p><i>Score explanation: Garden: The Berkeley Food Institute provides opportunities for students, staff, faculty, and community members to lead and engage in food systems topics. UC Berkeley is also home to over 10 urban gardens that produce food and preserve ecosystems, allowing UC Berkeley students to design, implement, and maintain urban gardens alongside faculty, staff, gardeners, and community members.</i></p> <p><i>Conferences, speaker series, symposia, or similar events: The UC Berkeley School of Public Health Brown Bag series is student-facing and has included multiple sessions on planetary health topics. Environmental Justice Community: JMP Students are required to complete a Health and Behavior Breadth Course as part of their core curriculum. This class discusses community-based research and includes a panel of community members involved in the CHAMACOS Study, the Richmond Youth Air Quality Initiative, and other members involved in environmental justice.</i></p>	

Art exhibits: The UC Berkeley Bancroft Library Gallery will host [Voices for the Environment: A Century of Bay Area Activism](#), highlighting the evolution of environmentalism in the Bay Area, from October 6, 2023 to November 15, 2024.

Volunteer Opportunities: [UC Berkeley's Student Environmental Resource Center](#) provides opportunities for building community resilience and to make neighborhoods more self-sustaining, just, and regenerative.

Wilderness or outdoor programs: [UC Berkeley Recreational Sports](#) offers trips through [Cal Adventures](#), which include "appreciation of the natural environment" in their benefits but do not explicitly mention Leave No Trace principles. [Cal Hiking and Outdoor Society \(CHAOS\)](#) aims to offer outdoor programs while having minimal human impact on the environment.

Section Total (15 out of 15)

100%

Back to Summary Page [here](#)

Campus Sustainability

Section Overview: This section evaluates the support and engagement in sustainability initiatives by the 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 endeavour, the healthcare sector is well poised to lead the world to a more sustainable future. This will involve scrutinising 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 minimising environmental impact.

5.1. Does your <u>institution</u> have an Office of Sustainability?	
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. (3 points)	
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 hospital sustainability. (2 points)	
There are no salaried sustainability staff , but there is a sustainability task force or committee. (1 point)	
There are no staff members or task force responsible for overseeing campus sustainability. (0 points)	
Score Assigned:	3
<p><i>Score explanation:</i> The JMP’s preclerkship courses are held at UC Berkeley’s Golden Bear Center, which is within half a mile of the Office of Sustainability, with full-staff who are dedicated to sustainability since 2008. The office consists of a full time director (Kira Stoll), several staff members, graduate fellows, and undergraduate fellows. In addition, the JMP’s clerkships are held at UCSF, which also has an Office of Sustainability with a full time director. “The Office of Sustainability organizes the Advisory Committee on Sustainability, 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” (Source: Planetary Health Report Card 2021- UCSF).</p>	

5.2. How ambitious is your <u>institution's</u> plan to reduce its own carbon footprint?
The institution has a written and approved plan to achieve carbon neutrality by 2030 (5 points)
The institution has a written and approved plan to achieve carbon neutrality by 2040 (3 points)
The institution has a stated goal of carbon neutrality by 2040 but has not created a plan to reach that goal or the plan is inadequate (1 point)
The institution/medical school does not meet any of the requirements listed above (0 points)

Score Assigned:	5
<p><i>Score explanation: In November 2013, Present Janet Napolitano of the UC System introduced the Carbon Neutrality Initiative, a pledge for UCs to commit to emitting net zero greenhouse gases from carbon emission sources by 2025. UC Berkeley has a 2025 Carbon Neutrality Planning Framework and has a new Clean Energy Campus website, there are concrete plans set to reach these goals by 2030 with progress outlined. Similarly, the UCSF Office of Sustainability pledged to reach carbon neutrality by 2025.</i></p>	

<p>5.3. Do buildings/infrastructure used by the institution for teaching (not including the hospital) utilize renewable energy?</p>	
<p>Yes institution buildings are 100% powered by renewable energy. (3 points)</p>	
<p>Institution buildings source >80% of energy needs from off-site and/or on-site renewable energy. (2 points)</p>	
<p>Institution buildings source >20% of energy needs from off-site and/or on-site renewable energy. (1 point)</p>	
<p>Institution buildings source <20% of energy needs from off-site and/or on-site renewable energy. (0 points)</p>	
Score Assigned:	2
<p><i>Score explanation: Our current main medical building, Berkeley Way West, is a platinum LEED building. UC Berkeley's Cogeneration Plant provides approximately 90% of the electricity and 100% of the steam needs of the main campus. By generating steam (for heat) and electricity simultaneously, the plant is able to boast an overall energy conversion efficiency of 76%. The remaining 10% of electricity is either imported from certified/verified clean and renewable sources, produced on-site from clean and renewable sources, or purchased from PG&E.</i></p>	

<p>5.4. Are sustainable building practices utilised for new and old buildings on the <u>institution's</u> campus, with design and construction of new buildings and remodelling of old buildings conforming to a published sustainability rating system or building code/guideline?</p>	
<p>Yes, sustainable building practices are utilised for new buildings on the institution's campus and the majority of old buildings have been retrofitted to be more sustainable. (3 points)</p>	
<p>Sustainable building practices are utilised for new buildings on the institution's campus, but most old buildings have not been retrofitted. (2 points)</p>	
<p>Sustainable building practices are inadequately or incompletely implemented for new buildings. (1 point)</p>	
<p>Sustainability is not considered in the construction of new buildings. (0 points)</p>	

Score Assigned:	3
<p><i>Score explanation: The students at the Joint Medical Program enroll in preclerkship courses at UC Berkeley and mainly use two buildings, Golden Bear Center and Berkeley Way West (gold LEED certified). According to the UC Berkeley Office of Sustainability, “No new UC buildings or major renovations, except in special circumstances, will use on-site fossil fuel combustion, such as natural gas, for space and water heating.” An energy management system (EMS) that controls ventilation, temperature, lights and operating hours is used on all buildings (new and old) to balance building occupant comfort with energy conservation. The campus Energy Office (EO) tracks, monitors, and manages energy usage campus-wide to improve design, performance, and operation of buildings; reduce energy costs; and increase awareness of energy and water usage. (Source: Planetary Health Report Card 2021- UC Berkeley-UCSF Joint Medical Program) Furthermore, via the Strategic Energy Plan, UC Berkeley was able to reduce electricity use by 2.5 million kWh - or 10% of the total reductions achieved across campus in the last 7 years by retrofitting all campus buildings with LED lighting fixtures by replacing end-of-life T8 fluorescent lighting with LED technology.</i></p>	

<p>5.5. Has the <u>institution</u> implemented strategies to encourage and provide environmentally-friendly transportation options for students and reduce the environmental impact of commuting?</p>	
<p>Yes, the institution 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-utilised by students. Alternatively, the campus location is not amenable to unsustainable forms of transportation by default. (2 points)</p>	
<p>The institution has implemented some strategies to provide environmentally-friendly transportation options, but the options are unsatisfactorily accessible or advertised. (1 point)</p>	
<p>The institution has not implemented strategies to encourage and provide environmentally-friendly transportation options. (0 points)</p>	
Score Assigned:	2
<p><i>Score explanation: Students at the Joint Medical Program are also graduate students at UC Berkeley, so we are also eligible for free transportation on the AC Transit. The AC Transit unveiled their zero emission transit buses and are currently utilizing battery electric and fuel cell buses. Employees can also buy transit fares and passes, and the University of Berkeley will award employees \$10/month. Furthermore, UC Berkeley offers additional programs that encourage more sustainable forms of transportation, including offering discounted carpool parking pricing, pre-tax purchases, regional ride-matching services, and a host of other benefits and incentives. In addition to being able to ride the AC Transit in the East Bay for free, JMP students can access UCSF’s shuttle service, bike racks, and rideshare options.</i></p>	

<p>5.6. Does your <u>institution</u> have an organics recycling program (compost) and a conventional recycling program (aluminium/paper/plastic/glass)?</p>	
<p>Yes, the institution has both compost and recycling programs accessible to students and faculty. (2 points)</p>	

The institution has **either** recycling **or** compost programs accessible to students and faculty, but not both. (1 point)

There is **no** compost or recycling program at the medical school. (0 points)

Score Assigned:

2

Score explanation: Throughout UC Berkeley, including the JMP's medical school buildings, Golden Bear Center and Berkeley Way West, there are multiple waste bins for trash, recycling, and composting, which are accessible by students and faculty. Students are not allowed to eat in classrooms, so there are no 3-in-1 waste bins in classrooms, but there is at least one compost and recycle bin on each floor in Berkeley Way West and Golden Bear Center.

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

Yes, the institution 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. (3 points)

There are sustainability guidelines for food and beverages, but they are **insufficient or optional**. The institution **is engaged** in efforts to increase food and beverage sustainability. (2 points)

There are sustainability guidelines for food and beverages, but they are **insufficient or optional**. The institution is **not** engaged in efforts to increase food and beverage sustainability. (1 point)

There are **no** sustainability guidelines for food and beverages. (0 points)

Score Assigned:

2

Score explanation: In 2020, [UC Berkeley successfully increased sustainable food purchases](#) by campus foodservice providers to at least 20%. Sustainable food is defined as locally grown or within 250 miles from campus, organic, fair trade or humane. However, since UC Berkeley last achieved their goal in 2020, the sustainability guidelines for food and beverages have been optional.

5.8. Does the institution apply sustainability criteria when making decisions about supply procurement?

Yes, the institution has **adequate** sustainability requirements for supply procurement **and is engaged** in efforts to increase sustainability of procurement. (3 points)

There are sustainability guidelines for supply procurement, but they are **insufficient or optional**. The institution is **engaged** in efforts to increase sustainability of procurement. (2 points)

There are sustainability guidelines for supply procurement, but they are **insufficient or optional**. The institution is **not engaged** in efforts to increase sustainability of procurement. (1 point)

There are no sustainability guidelines for supply procurement. (0 points)	
Score Assigned:	3
<p><i>Score explanation: The University of California sustainability procurement guidelines includes UC Berkeley's and UCSF's targets and requirements for sustainable procurement practices. UC Berkeley has also created its own sustainable procurement goals in addition to the UC's guidelines. The goals are to comply with the UC's environmentally-preferable purchasing policies and procedures as well as to reach a 25% green spend and 25% economically and socially responsible spend in specific product categories.</i></p>	

5.9. Are there sustainability requirements or guidelines for events hosted at the institution?	
Every event hosted at the institution must abide by sustainability criteria. (2 points)	
The institution strongly recommends or incentivizes sustainability measures, but they are not required . (1 point)	
There are no sustainability guidelines for institution events. (0 points)	
Score Assigned:	1
<p><i>Score explanation: Similar to other UC campuses, UC Berkeley offers a Green Event Certification that provides guidelines for event planners to reduce their impact in a range of areas, including catering and food, venues, and waste reduction. Events can be certified under three categories: green, zero waste, and zero waste green, which are all encouraged but not mandatory.</i></p>	

5.10. Does your <u>institution</u> have programs and initiatives to assist with making lab spaces more environmentally sustainable?	
Yes, the institution has programs and initiatives to assist with making lab spaces more environmentally sustainable. (2 points)	
There are guidelines on how to make lab spaces more environmentally sustainable, but not programs or initiatives. (1 point)	
There are no efforts at the institution to make lab spaces more sustainable. (0 points)	
Score Assigned:	2
<p><i>Score explanation: At the Joint Medical Program, students conduct research at either a UC Berkeley and UCSF laboratory. UC Berkeley has a Green Lab checklist and guidelines that aim to improve sustainable practices in campus lab and research spaces. In addition, UCSF has a LivingGreen program where a team of experts will meet with a 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.</i></p>	

5.11. Does your <u>institution's</u> endowment portfolio investments include fossil-fuel companies?	
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. (4 points)	
The institution is entirely divested from fossil fuels. (3 points)	
The institution has partially divested from fossil fuel companies or has made a commitment to fully divest , but currently still has fossil fuel investments. (2 points)	
The institution has not divested from fossil-fuel companies, but faculty and/or students are conducting organised advocacy for divestment. (1 point)	
Yes, the institution has investments with fossil-fuel companies and there have been no efforts to change that. (0 points)	
Score Assigned:	4
<p><i>Score explanation: Within eight years, UC Berkeley plans to switch to a new clean and resilient energy system that will phase out fossil fuels and demonstrate cutting-edge technologies and creative financing. The UC Policy on Sustainable practices also has a goal that by 2025, UC campuses are required to procure 100% carbon-free electricity. Another goal is that no new UC buildings or major renovations, except in special circumstances, will use on-site fossil fuel combustion, such as natural gas, for space and water heating.</i></p>	
Section Total (29 out of 32)	91%

Back to Summary Page [here](#)

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+.*

Planetary Health Grades for the UC Berkeley - UCSF Joint Medical Program

The following table presents the individual section grades and overall institutional grade for the **UC Berkeley - UCSF Joint Medical Program** on this medical-school-specific Planetary Health Report Card.

Section	Raw Score %	Letter Grade
Planetary Health Curriculum (30%)	$(60/72) \times 100 = 83\%$	A-
Interdisciplinary Research (17.5%)	$(17/17) \times 100 = 100\%$	A+
Community Outreach and Advocacy (17.5%)	$(13/14) \times 100 = 93\%$	A
Support for Student-led Planetary Health Initiatives (17.5%)	$(15/15) \times 100 = 100\%$	A+
Campus Sustainability (17.5%)	$(29/32) \times 100 = 91\%$	A
Institutional Grade	$(A \times 0.3 + B \times 0.175 + C \times 0.175 + D \times 0.175 + E \times 0.175) = 92\%$	A

Report Card Trends

Section Overview

This graph demonstrates trends in overall and section grades for the years in which UC Berkeley - UCSF Joint Medical Program has participated in the Planetary Health Report Card initiative.

Planetary Health Report Card Trends for UC Berkeley - UCSF Joint Medical Program

