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# **Planetary Health Report Card:**

*University of California Berkeley -  
University of California San Francisco  
Joint Medical Program*

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2019-2020 Contributing Team:

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# 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 standardized and reproducible Planetary Health Report Card that medical students nationally can use to grade and compare their home institutions. This medical-student-driven initiative aims to compare medical schools on the basis of discrete metrics in four 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. This project is inspired by the [Racial Justice Report Card](#), an initiative from White Coats 4 Black Lives that has led to substantial impactful change at medical schools around the country.

# Planetary Health Curriculum

**Section Overview:** This section evaluates the integration of relevant planetary health topics into the medical school curriculum.

Metric	Points	Descriptor
1.1 Did your medical school offer elective courses to engage students in planetary health in the last year?	1	<b>Yes, the medical school has offered such elective courses in the last year.</b>
	0	No, the medical school has not offered such elective courses in the last year.
1.2 Does your medical school curriculum address the impact of climate change on the changing patterns of infectious diseases?	2	<b>The metric is met by the core curriculum.</b>
	1	The metric is met by elective coursework.
	0	The metric is not met.
1.3 Does your medical school curriculum address the environmental co-benefits of a plant-based diet in its nutrition lectures?	2	The metric is met by the core curriculum.
	1	<b>The metric is met by elective coursework.</b>
	0	The metric is not met.
1.4 Does your medical school curriculum address the potential mental health effects of environmental degradation and climate change?	2	<b>The metric is met by the core curriculum.</b>
	1	The metric is met by elective coursework.
	0	The metric is not met.
1.5 Does your medical school curriculum address the effects of industry-related environmental exposures (e.g. air pollution, pesticides) on pregnancy?	2	The metric is met by the core curriculum.
	1	<b>The metric is met by elective coursework.</b>
	0	The metric is not met.

1.6 Does your medical school curriculum address endocrine disrupting chemicals and their effects?	2	The metric is met by the core curriculum.
	1	<b>The metric is met by elective coursework.</b>
	0	The metric is not met.
1.7 Does your medical school curriculum address the relationships between individual patient food security, ecosystem health, and climate change?	2	The metric is met by the core curriculum.
	1	<b>The metric is met by elective coursework.</b>
	0	The metric is not met.
1.8 Does your medical school curriculum address the effect of air pollution on respiratory and cardiovascular health?	2	<b>The metric is met by the core curriculum.</b>
	1	The metric is met by elective coursework.
	0	The metric is not met.
1.9 Does your medical school curriculum address the relationship between heat-related illnesses and climate change?	2	<b>The metric is met by the core curriculum.</b>
	1	The metric is met by elective coursework.
	0	The metric is not met.
1.10 Does your medical school curriculum address the outsized impact of anthropogenic environmental toxins and climate change on vulnerable populations such as those with low SES, women, minorities, indigenous communities, children, and the elderly?	2	The metric is met by the core curriculum.
	1	<b>The metric is met by elective coursework.</b>
	0	The metric is not met.
1.11 Does your medical school curriculum identify ways to advocate for and implement sustainable best practices	2	The metric is met by the core curriculum
	1	The metric is met by elective coursework.

in health care? (for example, avoiding unnecessary OR waste)	0	<b>The metric is not met.</b>
1.12 Does your medical school curriculum address important environmental threats that are relevant to the university's surrounding community? (for example, fires in California)	2	<b>The metric is met by the core curriculum.</b>
	1	The metric is met by elective coursework.
	0	The metric is not met.
1.13 Does your institution have graduate or non-medical undergraduate level courses on planetary health open to medical student enrollment free of charge?	2	<b>There are graduate or undergraduate level courses open to free medical student enrollment.</b>
	1	There are graduate or undergraduate level courses but they are not open to free medical student enrollment.
	0	There are no graduate level courses related to planetary health
1.14 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?	1	Yes, there are strategies introduced for having conversations with patients about climate change.
	0	<b>No, there are no strategies introduced for having conversations with patients about climate change.</b>
1.15 In training for patient encounters, does your institution's curriculum introduce strategies for taking an environmental history or exposure history?	1	Yes, the curriculum includes strategies for taking an environmental history.
	0	<b>No, the curriculum does not include strategies for taking an environmental history.</b>
1.16 Does your medical school have an ongoing program that offers incentives for	1	Yes, the medical school has an incentive program.

faculty/departments to develop new planetary health courses and/or incorporate planetary health into existing courses?	0	No, the medical school does not have an incentive program.
Section Total (out of 28)	18	

### Score explanations:

\*Special Note: A core part of the curriculum at the Joint Medical Program (JMP) is Problem-Based Learning. Students learn foundational aspects of the biological and medical sciences by peer-led inquiry structured around patient cases. The pedagogy is guided by self-determination theory, which provides students the flexibility to select what topics they want to learn in more depth. As a result, different groups of students may reach different decisions about whether or not they wish to learn more about a planetary health topic that is brought up within a case. We recommend that all modified Problem-Based Learning cases include explicit notes for the faculty tutors recommending that they push students to cover these planetary health topics, including, but not limited to, the ones described in the following criteria.

#### 1.1 Elective Courses

The JMP does not generally provide elective courses for students to take. Students are highly encouraged to take at least one graduate course in any discipline at UC Berkeley per semester, and, on average, they take around 3-4 elective courses beyond the core requirements for graduation. The UC Berkeley School of Public Health offers at least one course related to environmental health sciences every semester, and JMP students are eligible to enroll. The UC Berkeley Sustainability website includes a [list of 600](#) sustainability-related undergraduate and graduate courses offered from 2015-2018, and we recommend that the JMP should compile a list of popular planetary health courses available for students and make it accessible to students to facilitate enrollment in these courses.

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#### 1.2 Infectious Disease

UC Berkeley offers graduate courses, available for JMP students, related to environmental health and infectious disease. Example: PB HLTH 273: Environmental Determinants of Infectious Disease. Components of the Problem-Based Learning Curriculum do discuss this topic. Example: the patient case of Jerry Dietz. We recommend that the case makes it clear that the patient's diagnosis is directly linked to changes in environmental conditions and that this trend holds true for other infectious diseases.

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### **1.3 Diet and Sustainability**

UC Berkeley offers courses, available for JMP students, related to nutrition that discuss the importance of a plant-based diet; however, this topic is not covered in the JMP core curriculum. Examples: NUSCTX 161A/B: Medical Nutrition Therapy I/II. Components of the Problem-Based Learning Curriculum cover nutrition but without discussing a plant-based diet, relationships between local food production, sustainability, and health, or interventions available to medical providers. We recommend that the JMP integrate this topic in a Problem-Based Learning case and/or organize an enrichment session on this topic.

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### **1.4 Mental Health**

UC Berkeley offers courses, available for JMP students, that broadly focus on topics related to climate change, migration, refugees, and mental health. However, these are primarily courses for undergraduate students. Example: SOCIOL 137AC/ESPM 163AC: Environmental Justice: Race, Class, Equity, and the Environment. Components of the Problem-Based Learning Curriculum do discuss this topic. Example: the patient case of Carlos Sanders.

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### **1.5 Environmental Exposures in Pregnancy**

UC Berkeley offers graduate courses, available for JMP students, that discuss topics related to environmental exposures during pregnancy and are taught by faculty affiliated with the UC Berkeley Center of Excellence in Maternal, Child, and Adolescent Health. Examples: PB HLTH 212A: International Maternal and Child Health and PB HLTH 207A: Public Health Aspects of Maternal and Child Nutrition. There are only a few cases in the Problem-Based Learning Curriculum that cover maternal health and pregnancy, and they do not specifically include information on the dangers of environmental exposures. We recommend that the JMP integrate this topic in an existing Problem-Based Learning case.

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### **1.6 Endocrine Disrupting Chemicals**

UC Berkeley offers graduate courses, available for JMP students, related to the health impacts of endocrine disrupting chemicals; however, this topic is not covered in the JMP core curriculum. Example: INTEGBI 241: Advanced Topics in Endocrine-Regulated Development. Components of the Problem-Based Learning Curriculum cover endocrinology but without discussing chemicals that impact the function of the endocrine system. We recommend that the JMP integrate this topic in a Problem-Based Learning case and/or organize an enrichment session on this topic.

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### **1.7 Food Security**

UC Berkeley offers many undergraduate and graduate courses, available for JMP students, related to the intersection of food security, food systems, and climate change. Examples: 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. Components of the Problem-Based Learning Curriculum discuss food security but without direct connections to environmental factors. We

recommend that the JMP integrate this topic in a Problem-Based Learning case and/or organize an enrichment session on this topic.

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### **1.8 Air Pollution**

UC Berkeley offers undergraduate and graduate courses, available for JMP students, related to the respiratory and cardiovascular health effects of air pollution. Example: PB HLTH 290: Global Air Quality and Health. Components of the Problem-Based Learning Curriculum do discuss this topic. Example: the patient case of Marcela Dominguez--a resident of the Iron Triangle in Richmond--who is diagnosed with a respiratory condition. We recommend that the JMP integrate air pollution exposure into a patient case of cardiovascular disease so that students also have the opportunity to explore the connection between pollution and heart disease.

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### **1.9 Heat-Related Illnesses**

UC Berkeley offers courses, available for JMP students, that discuss heat-related illnesses along with several other health implications of climate change. Examples: GEOG 149B: Climate Impacts and Risk Analysis and PB HLTH C271G: Health Implications of Climate Change. Components of the Problem-Based Learning Curriculum do discuss this topic. Example: the patient case of Susana Warden.

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### **1.10 Environmental Determinants of Health**

UC Berkeley offers courses, available for JMP students, that discuss environmental injustice and environmental determinants of health. Examples: ESPM 163AC/SOCIOL 137AC: Environmental Justice: Race, Class, Equity, and the Environment and PB HLTH C271G: Health Implications of Climate Change. Components of the Problem-Based Learning Curriculum allude to environmental determinants of health (example: Marcela Dominguez case); however, there is no explicit focus on the effects of anthropogenic environmental toxins and climate change on vulnerable populations. We recommend that the JMP encourage students to cover this topic in an existing Problem-Based Learning case by, for example, providing guidance for faculty tutors to bring it up during the case, or linking an article on this topic within the case.

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### **1.11 How to Advocate for Sustainable Practices**

The JMP curriculum does not include specific reference to the roles of the healthcare sector in contributing to climate change and does not advocate for the implementation of sustainable practices, such as avoiding unnecessary operating room waste. We recommend that the JMP include a lesson on healthcare and sustainability before students transition to clerkships, which could be added to the Patient Care and Clinical Skills curriculum or presented as an enrichment session.

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### **1.12 Area-Specific Environmental Threats**

UC Berkeley offers courses, available for JMP students, about environmental threats specifically



concerning California. Examples: ESPM C46: Climate Change and the Future of California and ENERES 171: California Water. Components of the Problem-Based Learning Curriculum do not directly address contemporary and future environmental threats for the surrounding community. The Marcela Dominguez case discusses the health effects of air pollution exposure, but there are no explicit references to ongoing and future environmental threats that students are encouraged to learn about. We recommend that the JMP integrate this topic in a Problem-Based Learning case and/or organize an enrichment session on this topic.

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### **1.13 Graduate-Level Planetary Health Courses**

There are both online and in-person graduate and undergraduate level courses at UC Berkeley open for JMP students to enroll in, as referenced in prior explanations, since JMP students are registered as UC Berkeley students for the first 2.5 years of the program.

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### **1.14 Patient Encounters**

The JMP and UCSF have not offered any education to medical students related to talking to patients who have been affected by climate change. This is a topic that can be integrated into the Master Clinician Working Group (MCWG) curriculum before students start clerkships. The JMP can coordinate with UCSF faculty and staff including Dr. Nick Iverson to ensure this topic is covered during F2 and/or Career Launch portions of the curriculum.

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### **1.15 Environmental History**

The significance of taking an occupational and environmental history is briefly discussed in some Problem-Based Learning cases and the H&P structure class during MCWG, but students are not introduced to strategies for taking an environmental history or exposure history. Specific strategies for environmental history taking should be incorporated into the MCWG course or be deliberately integrated into pre-clerkship preceptorship experiences.

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### **1.16 Faculty Incentives**

To our knowledge, there are no specific faculty incentives at the JMP/UC Berkeley School of Public Health to develop new planetary health courses and/or incorporate planetary health into existing courses.

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## Interdisciplinary Research in Health and Environment

**Section Overview:** This section evaluates the quality and quantity of interdisciplinary research in health and environment at the medical school.

Metric	Points	Description
<a href="#">2.1</a> Does your institution have a planetary health website, or a website centralizing various campus resources related to health and the environment?	1	<b>There is a website that centralizes various campus resources related to health and the environment.</b>
	0	There is no website.
<a href="#">2.2</a> Has your institution hosted a conference on planetary health in the past 3 years?	1	Yes, the institution has hosted a conference on planetary health in the past three years.
	0	<b>No, the institution has not hosted an interdisciplinary health conference in the past three years.</b>
<a href="#">2.3</a> Are there researchers engaged in planetary health research at your institution?	3	<b>Yes, there is a department, institute, or center devoted to planetary health.</b>
	2	Yes, there are individual faculty members who are doing research on topics immersed in planetary health.
	1	Yes, there are individual faculty members who are doing research that is related to planetary health.
	0	No, there is no research on planetary health at this time.
<a href="#">2.4</a> Is there a dedicated department or institute for multidisciplinary environmental and planetary health research?	1	<b>There is a dedicated department or institute.</b>
	0	There is no dedicated department or institute.
<a href="#">2.5</a> Is there active recruitment of researchers who focus on planetary health issues?	1	<b>There is active recruitment.</b>
	0	No recruitment efforts are made.

<a href="#">2.6</a> Is there quantitatively and qualitatively meaningful research that has been authored or co-authored by researchers from your institution on planetary health issues?	2	<b>Yes, researchers from my institution have produced a substantial body of impactful research related to planetary health.</b>
	1	There has been some research related to planetary health generated by researchers from my institution, but it is lacking in quantity and/or quality.
	0	There are no studies authored or co-authored by university researchers on these issues.
<a href="#">2.7</a> Has your institution joined the Planetary Health Alliance and/or the Global Consortium on Climate and Health Education?	1	<b>Yes, the institution has joined the Planetary Health Alliance and/or the Global Consortium on Climate and Health Education.</b>
	0	No, the institution has not joined the Planetary Health Alliance or the Global Consortium on Climate and Health Education.
Section Total (out of 10)	<b>9</b>	

## Score Explanations

### 2.1 Planetary Health Website

Information on planetary health, research groups, recent publications, educational materials, and community organizations is available on several UC Berkeley-affiliated websites. Examples include sites for the [School of Public Health Division of Environmental Health Sciences](#), [Center for Environmental Research and Children’s Health \(CERCH\)](#), [Center for Occupational and Environmental Health](#), and [Berkeley Office of Sustainability](#).

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### 2.2 Planetary Health Conference

The UC Berkeley School of Public Health annually hosts the [Environmental Health Sciences Symposium](#), which is a small event where students can showcase their research. However, there has been no large national-level conference related to planetary health that has been recently held by the UC Berkeley School of Public Health.

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### 2.3 Planetary Health Individual Researchers

UC Berkeley has several departments and centers devoted to environmental science research (e.g., Environmental Science, Policy, and Management (ESPM), Energy and Research Group, Center for Law, Energy, and the Environment, CERCH, Center for Occupational and Environmental Health). The School of Public Health has a specific department--the [Division of Environmental Health Sciences](#)--and most faculty members affiliated with the department are focusing on conducting planetary health research. The

primary research interests of a few faculty members of the JMP focus on planetary health, and oftentimes, at least one student in each cohort of JMP students conducts research on an environmental health topic for their Master's Thesis.

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## **2.4 Institute for Multidisciplinary Research on Health and the Environment**

The School of Public Health's Division of Environmental Health Sciences is a robust department of faculty members and students conducting multidisciplinary research. Areas of research include energy use, air/water pollution, climate change, occupational exposures, global health, epigenetics, environmental engineering, and a variety of other disciplines. The [Environmental Change Research Network \(ECRN\) @ Berkeley](#) is a hub for interdisciplinary research to address climate change.

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## **2.5 Recruitment of Planetary Health Researchers**

The School of Public Health's Division of Environmental Health Sciences actively recruits new faculty members dedicated to planetary health research.

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## **2.6 Meaningful Research**

Faculty and graduate and undergraduate students at the School of Public Health have published impactful research on multiple aspects of planetary health, and their research has formed the basis of policy advocacy and decisions in the state of California and nationally. Rachel Morello-Frosch at the School of Public Health participated in a campus-wide working group to envision the future of UC Berkeley research on "Environmental Change, Sustainability and Justice" that produced [this report](#). Many JMP students who conduct planetary health research for their Master's Thesis will go on to publish their findings and present them at national conferences. For example, Anthony Nardone's [JMP thesis research](#) demonstrated that higher diesel particulate emissions in redlined census tracts in California are associated with increased Emergency Department visits for asthma. This research supports California's efforts to reduce environmental injustice in disadvantaged communities: AB 617 implementation.

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## **2.7 Planetary Health Alliance**

The UC Berkeley School of Public Health and UCSF School of Medicine are both listed as members of the Global Consortium on Climate and Health Education.

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## Community Outreach and Advocacy in Environment and Health

**Section Overview:** This section evaluates the quality of medical school engagement in community programming and outreach and advocacy efforts associated with the environment and health.

Metric	Points	Description
3.1 How often does your institution offer community-facing courses or events regarding planetary health and the environment?	2	<b>The institution offers such community-facing courses or events at least once every year.</b>
	1	The institution offers such community-facing courses or events less than once per year.
	0	The institution does not offer such community-facing courses.
3.2 Does your institution interface with community organizations to promote planetary and environmental health?	1	<b>Yes, the institution formally interfaces with one or more community organizations to promote planetary and environmental health.</b>
	0	No, there is no such community partnership.
3.3 Does your institution have regular coverage of issues related to planetary health in its primary campus magazine?	2	Yes, there is an article related to planetary health in the majority of issues.
	1	<b>In the past year, there has been at least one article related to planetary health.</b>
	0	There has been no mention of planetary health in the last year in the campus magazine
3.4 Does the institution offer continuing medical education courses that address planetary health?	2	Yes, one or more in-person CME courses are offered.
	1	<b>Yes, one or more online CME courses are offered.</b>
	0	There are no courses.
3.5 Does your institution provide opportunities for medical student engagement in developing community resilience to anthropogenic environmental impacts?	1	Yes, the institution has provided opportunities.
	0	<b>No, the institution has not provided opportunities.</b>

3.6 Does institutional marketing (posters, billboards, etc) address climate change or the relationship between health and the environment?	1	<b>Yes, institutional marketing addresses the intersections between climate and health.</b>
	0	No, institutional marketing does not address these intersections.
3.7 Does your medical center have accessible educational materials for patients about environmental health exposures?	1	<b>Yes, the medical center has accessible educational materials.</b>
	0	No, the medical center does not have accessible educational materials.
3.8 Does your institution's endowment portfolio investments include fossil-fuel companies?	3	<b>No, the institution is entirely divested from fossil fuels.</b>
	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.
Section Total (out of 13)	<b>10</b>	

## Score Explanations

### 3.1 Community-facing courses

The UC Berkeley School of Public Health offers many events open to the public, some of which include planetary health. However, many of these events are not publicized as being tailored for attendance of specific communities that are being impacted by the topics presented. JMP faculty have been involved in several public-facing events, highlighted below. Outside of the School of Public Health, UC Berkeley offers a community-facing course called [Edible Education 101](#), which covers topics in sustainable food systems.

Select list of public-facing events offered by the School of Public Health in the 2019-2020 academic year:

1. SPH Brown Bag: Chronic Exposure to Traffic-Related Air Pollution and Cancer Risk: Are we all Susceptible? (November 12, 2019 @ 11:30 am - 12:30 pm PST)
2. Climate Crisis, Designer Babies, Our Common Future. (October 18, 2019 @ 6:30 pm - 8:30 pm PDT), a panel discussion moderated by JMP faculty member Osagie Obasogie.

3. SPH Brown Bag: Research to Regulation: a Physician-Scientist's Search for Healthy Equity in Air Quality and Climate Change. (October 22, 2019 @ 11:30 am - 12:30 am PST), lunch talk given by JMP Director John Balmes.
4. SPH Brown Bag: Thermal thresholds increase the vulnerability of coastal Los Angeles to temperature-linked increases in West Nile virus transmission (October 15, 2019 @ 11:30 am - 12:30 pm PST)

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### **3.2 Community organizations**

The School of Public Health has many professors who work on community-based participatory research projects in partnership with community organizations. Specifically, Rachel Morello-Frosch is working with the [Asian Pacific Environmental Network \(APEN\)](#) on a research project investigating the projected impact of rising sea levels on local communities. Kim Harley is leading a youth-driven research and advocacy project with high school students in Salinas, investigating resident exposure to pesticides and chemicals in cleaning products. JMP faculty member John Balmes is [Physician Member](#) of the California Air Resources Board, and Janet Perlman 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. JMP students are also engaged with community organizations, including Raj Fadadu, who is Founder/Director of the Environmental Health Working Group of the Berkeley Climate Action Coalition, and Sarah Shear, who is Advocacy Co-Chair of [Medical Students for a Sustainable Future](#), Co-Chair of the [AAPCA1 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](#).

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### **3.3 Coverage in campus magazine**

There is no official university magazine for UC Berkeley, but the Cal Alumni Association publishes a magazine titled [California](#). Sometimes they include articles regarding planetary health, such as covering nearby wildfires in the "Science + Health" section. The UCSF Magazine, specifically made for alumni and the larger UCSF community, ran a feature in its [Winter 2020 issue](#) titled "[The Climate Crisis is a Health Crisis.](#)" To our knowledge, there is no similar magazine published by the School of Public Health, though the School has a [section](#) on the California magazine website.

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### **3.4 Continuing education courses**

The UC Berkeley Center for Occupational and Environmental Health (COEH) offers a free online course on "[Doctoring Climate Change: Air Quality, Heat-Related Illness, and Disparate Impact.](#)" COEH is accredited by the CMA to provide continuing medical education for physicians. Similar courses offered in-person are encouraged.

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### **3.5 Community outreach**

The [UC Berkeley Student Environmental Research Center](#) lists over 40 environmental and sustainability

registered student organizations. One example of community outreach specifically focused on resilience is the [Sustainable Urban Farming for Resilience and Food Security](#) project. Most of these groups and projects are primarily geared toward undergraduate students, and none are specific for medical students. Therefore, we recommend that medical students in the JMP are made more aware of these opportunities, and we believe the formation of a chapter of Medical Students For a Sustainable Future at the JMP will open more pathways for community outreach to develop climate resilience.

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### **3.6 Marketing**

The JMP website mentions that students can do a research thesis on a variety of topics, including in “Environmental Sciences” in relation to the larger themes of Population Health and Health Equity. The School of Public Health also has an [Environmental Health Sciences Division](#) highlighted on their website. However, the JMP and the School of Public Health do not have posters or other publicity directly linking climate change and health. At UCSF, the Office of Sustainability has released a poster and billboard campaign called [“Climate Changes Health.”](#) explicitly connecting climate change and health and highlighting actions community members can take to lower the institution’s carbon footprint. We recommend the JMP, UC Berkeley SPH, or Office of Sustainability initiate a similar campaign.

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### **3.7 Patient educational materials**

Regarding our affiliated medical center (UCSF): “The Program on Reproductive Health and the Environment at UCSF has produced a series of online and printed patient-facing brochures about toxic exposures called “Toxic Matters,” “Work Matters,” “Pesticides Matter,” and “Food Matters.” These brochures can be found here: <https://prhe.ucsf.edu/info>.” -Planetary Health Report Card 2020: UCSF

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### **3.8 Investments**

On May 19, 2020, the University of California system announced that it had “capped a five-year effort to move the public research university system’s \$126-billion portfolio into more environmentally sustainable investments, such as wind and solar energy.” The companies it pledged to divest from included but were not limited to the top 200 publicly-traded fossil fuel companies. “UC has sold more than \$1 billion in fossil fuel assets from its pension, endowment and working capital pools and surpassed its five-year goal of investing \$1 billion in clean energy projects” -[“UC becomes nation’s largest university to divest fully from fossil fuels.” Los Angeles Times.](#)

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# University Support for Student-Led Planetary Health Initiatives

**Section Overview:** This section evaluates the extent and quality of institutional support for student-led planetary health initiatives, such as funding, programming, etc.

Metric	Points	Description
4.1 Does your medical school offer a year-long fellowship for medical students to enact an initiative related to planetary health?	1	<b>The medical school offers an explicit year-long fellowship for medical students to enact an initiative related to planetary health.</b>
	0	There is no explicit practicum or year-long planetary health fellowship open to medical students.
4.2 Does your medical school have a website where medical students can learn about applying for funding for planetary health initiatives?	1	<b>Yes, there is a website where medical students can learn about applying for funding for initiatives related to planetary health.</b>
	0	No, there is no such website.
4.3 Does your institution have a website where medical students can find the contact information of mentors for planetary health initiatives?	2	The institution has a webpage that lists faculty involved in planetary health.
	1	<b>The institution has a general website or directory that lists faculty and staff members' research and/or academic interests, but is not planetary health specific.</b>
	0	There is no simple means of locating potential mentors for planetary health initiatives.
4.4 Does your medical school have funded, registered student groups dedicated towards fostering a culture of planetary health engagement and scholarship 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	<b>No, there is not a funded student organization at my institution dedicated to planetary health or sustainability in healthcare.</b>

<a href="#">4.5</a> 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	Conferences, speaker series, symposia or similar events related to planetary health that have students as the intended audience.
	0	Cultural arts events, installations or performances related to planetary health that have students as the intended audience.
	1	Wilderness or outdoors programs (e.g., that organize hiking, backpacking, kayaking, or other outings for students) that follow Leave No Trace principles.
Section Total (out of 10)	6	

## Score Explanations

### 4.1 Fellowship opportunity

The University of California’s [Carbon Neutrality Initiative](#) offers year-long paid fellowships to which all UC students, including JMP students, can apply. These include the [Carbon Neutrality Initiative Fellowships](#) and the [Global Food Initiative Fellowships](#). The Berkeley Food Initiative also offers a year-long [Graduate Research and Leadership Fellowship](#) for community-based research projects and a summer [Graduate Student Research Fellowship](#). These opportunities should be publicized to JMP students, as most of us did not previously know about them.

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### 4.2 Funding application website

Students can apply for funding for planetary health initiatives through [The Green Initiative Fund \(TGIF\)](#) at UC Berkeley. TGIF “provides funding, via grants, for projects that improve and support UC Berkeley’s campus sustainability efforts. TGIF allocates funds to projects that promote sustainable modes of transportation, increase energy and water efficiency, restore habitat, promote environmental and food justice, and reduce the amount of waste created by UC Berkeley.” This opportunity should be publicized to JMP students, as most of us did not previously know about these grants, which can provide financial support for new planetary health initiatives.

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### 4.3 Mentor contact information

UC Berkeley has a [general directory of faculty mentors](#) through which students can search for mentors in all fields, including planetary health, and the School of Public Health Division of Environmental Health Sciences has a [website](#) listing their faculty; however, no comprehensive website or directory exists for

identifying faculty mentors in planetary health across UC Berkeley.

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#### 4.4 Registered student group

There are a number of [UC Berkeley-wide student groups](#) focused on sustainability, but there is no funded and faculty mentored student organization within the JMP dedicated to planetary health and sustainability. Currently, JMP students are engaged in a national network called [Medical Students for a Sustainable Future](#) but without formal registration, funding or faculty advising. We hope to formally register and obtain funding and mentorship for a JMP chapter.

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#### 4.5 Miscellaneous programs and initiatives

- **Garden:** UC Berkeley offers many [opportunities](#) to learn about and engage in sustainable food systems. These include volunteering in one of many [on-campus gardens](#) and working on [food recovery](#) after events.
- **Conferences, speaker series, symposia, or similar events:** The School of Public Health Brown Bag series described in criteria 3.1 is also student-facing and has included multiple sessions on planetary health topics. [One example](#) is the “Advancing Environmental Health through Youth Participatory Action Research.”
- **Cultural arts events, installations, or performances:** We are not aware of any events within the JMP or the broader School of Public Health or UC Berkeley community that incorporate planetary health into performances, installations, or cultural events with a student audience.
- **Wilderness or outdoor programs:** Outdoor programs are offered through the [Cal Hiking and Outdoor Society \(CHAOS\)](#), and its [Constitution](#) includes having “minimal human impact on the environment” in its Statement of Purpose. [UC Berkeley Recreational Sports](#) also offers trips through [Cal Adventures](#), which include “appreciation of the natural environment” in their benefits but do not explicitly mention Leave No Trace principles.

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# 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. 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 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	Grade
<b>Planetary Health Curriculum</b>	18 / 28 = 64%	B-
<b>Interdisciplinary Research in Health and Environment</b>	9 / 10 = 90%	A
<b>Community Outreach and Advocacy in Environment and Health</b>	10 / 13 = 77%	B+
<b>University Support for Student-led Planetary Health Initiatives</b>	6 / 10 = 60%	B-
<b>Institutional Grade</b>	<b>Average of four scores above = 73%</b>	<b>B</b>