

Planetary Health Report Card (Medicine):

UC Davis School of Medicine



2022-2023 Contributing Team:

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Summary of Findings

Overall	В
Curriculum	C

- UC Davis School of Medicine does include planetary health in the curriculum, but it lacks integration longitudinally within the core curriculum. A majority of planetary topics are covered in a 3rd or 4th year elective.
- **Recommendations:** There is a lack of teaching about introducing conversations about planetary health into conversations with patients. This could be introduced in clinical skills or in preclinical lectures.

Interdisciplinary Research

A

- The UC Davis School of Medicine is a part of various initiatives to research topics regarding planetary health both within and outside of the medical campus.
- **Recommendations**: Involve those most impacted by climate change in research design committees and allot them decision making power.

Community Outreach and Advocacy

C+

- UC Davis School of Medicine engages the community in academic contexts but opportunities for medical students to directly engage with communities impacted by climate change are very limited.
- Recommendations: Inclusion of regular updates regarding planetary health and sustainability initiatives, such as a newsletter, within the UC Davis Health system in which students can participate. Form connections with community leaders and organizations involved in this work and facilitate meaningful partnerships.

Support for Student-Led Initiatives

A

- The UC Davis main campus offers a variety of sustainability initiatives and encourages students to engage in topics they are passionate about. However, these initiatives do not typically involve the medical school and are not advertised to medical students.
- **Recommendations**: Support for student-led initiatives mostly comes from the wider University rather than the Medical School. We recommend the medical school offer increased support to students interested in sustainable initiatives or creating more accessible opportunities close to the medical campus.

Campus Sustainability

B+

- UC Davis Health has been recognized as a leader in striving toward sustainable healthcare in energy and sustainable food systems including the largest farm-to-fork food system in our hospital.
- **Recommendations**: There is still much to improve with campus sustainability. Goals and plans are already in place at the Medical School to strive toward carbon neutrality, but we also recommend improving campus wide composting, recycling, and transportation programs.

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

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

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

Definitions & Other Considerations

Definitions:

- Planetary Health: is described by the Planetary Health Alliance as "the health of human civilisation and the state of the natural systems on which it depends." For example, topics such as climate change, declining biodiversity, shortages of arable land and freshwater, and pollution would all fall under the realm of planetary health. Both planetary health and traditional 'environmental health' examine the relationship between human health and the external environment, including extreme temperatures, chemicals, vector-borne diseases, etc. Planetary health explicitly concerns itself with the potential health harms associated with human-caused perturbations of natural systems. Therefore, the human health focus of planetary health makes the field well-adapted for the context of medical school education. Throughout this report card, we use the term planetary health to refer to this broad swath of topics, but resources do not need to explicitly include the term "planetary health" to satisfy the metric.
- 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 vs. Institution: When "medical school" is specified in the report card, this
 only refers to curriculum and resources offered by the School of Medicine and does not
 include offerings from other parts of the university (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. Any resource reasonably accessible by medical students, no matter where in the institution the resource comes from or if it is specifically targeted for medical students, can meet this metric.

- Environmental history (Metric #19 in Curriculum Section): This is a series of questions providers are taught to ask during medical encounters that elicits patients' exposures and environmental risk factors. Historically, this has included consideration of exposures like pesticides, asbestos, and lead, though in the modern era shaped by climate change, it can be expanded to include things like wildfire smoke exposure, air pollution and mold after flooding. Key components include place of residence over the lifecourse, occupational history, food and water sources (e.g. meat from industrial feeding operations, regular fishing in contaminated water, access to clean drinking water), and exposure to air pollution.
- **Elective:** The word "elective" refers to an optional course or lecture series that a medical student can opt to take part in but is not a requirement in the core curriculum. Generally, these elective courses take place in the preclinical curriculum but vary by school.
- Clerkship: This is a term used in the USA to refer to placements that medical students go on e.g. Pediatrics, General medicine, Psychiatry. In the UK these are referred to as rotations or placements.

Other considerations:

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

Added to our resources last year, the Planetary Health Report Card <u>Literature</u> Review by <u>Metric</u> collates the evidence behind each of the metrics in the Planetary Health Report Card. It serves as a collection of references for further learning and a resource for those advocating for increased planetary health engagement at their institutions.

Planetary Health Curriculum

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

Curriculum: General

1. Did your <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?	
3	Yes, the medical school has offered more than one elective whose primary focus is ESH/planetary health in the past year.
2	Yes, the medical school has offered one elective whose primary focus is ESH/planetary health in the past year.
1	The medical school does not have any electives whose primary focus is ESH/planetary health, but there are one or more electives that include a lecture on planetary health.
0	No, the medical school has not offered any electives on planetary health or electives that include ESH/planetary health topics in the past year.
Score explanation:	
UC Davis School of Medicine offers 1 elective course during the 3rd and 4th year, titled "Climate Change: Implications for Clinical Practice and Population Health"	

Curriculum: Health Effects of Climate Change

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

Score explanation:

UC Davis School of Medicine offers both preclinical and clinical experiences to address heat, health risks and climate change.

MS1 Curriculum offerings:

- 1. CPR L152: Heat Stroke
- 2. CPR TBL45: Heat Stroke includes a discussion of which social/economic groups are most vulnerable, and how climate change affects risk

MS3 Curriculum offerings:

1. Clerkship Intersession 3: Chronic Dyspnea

Clerkship offering: Climate Change: Implications for Clinical Practice and Population Health

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

Score explanation:

UC Davis School of Medicine offers both preclinical and clinical experiences to address heat, health risks and climate change.

MS1 Curriculum offering: CPR L152: Heat Stroke

Clerikship offering: Climate Change: Implications for Clinical Practice and Population Health

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

Score explanation:

UC Davis School of Medicine offers 1 elective course during the 3rd and 4th year to address the impact of climate change on the changing patterns of infectious diseases, titled "Climate Change: Implications for Clinical Practice and Population Health"

5. Does your medical school curriculum address the respiratory health effects of climate change

and	and air pollution?	
3	This topic was explored in depth by the core curriculum.	
2	This topic was briefly covered in the core curriculum.	
1	This topic was covered in elective coursework.	
0	This topic was not covered.	

Score explanation:

UC Davis School of Medicine offers both preclinical and clinical experiences to address the respiratory health effects of climate change and air pollution.

MS1 Curriculum offerings:

- 1. CPR L151: Air Pollution and Cardiac and Pulmonary Disease
- 2. CPR L84: Health Equity and Environmental Justice

Clerkiship offering: Climate Change: Implications for Clinical Practice and Population Health

	6. Does your <u>medical school</u> curriculum address the cardiovascular health effects of climate change, including increased heat?	
3	This topic was explored in depth by the core curriculum.	
2	This topic was briefly covered in the core curriculum.	
1	This topic was covered in elective coursework.	
0	This topic was not covered.	

Score explanation:

UC Davis School of Medicine offers both preclinical and clinical experiences to address the cardiovascular health effects of climate change, including increased heat.

MS1 Curriculum offerings: CPR L151: Air Pollution and Cardiac and Pulmonary Disease

Clerkiship offering: Climate Change: Implications for Clinical Practice and Population Health

7. Does your medical school curriculum address the mental health and neuropsychological effects of environmental degradation and climate change? 3 This topic was explored in depth by the core curriculum. 2 This topic was briefly covered in the core curriculum. 1 This topic was covered in elective coursework.

0 This topic was **not** covered.

Score explanation:

UC Davis School of Medicine offers 1 elective course during the 3rd and 4th year to address the mental health and neuropsychological effects of environmental degradation and climate change, titled "Climate Change: Implications for Clinical Practice and Population Health"

8. Does your <u>medical school</u> 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.
- 2 This topic was **briefly** covered in the **core** curriculum.
- 1 This topic was covered in **elective** coursework.
- 0 This topic was **not** covered.

Score explanation:

UC Davis School of Medicine offers both preclinical and clinical experiences to address the relationships between health, individual patient food and water security, ecosystem health, and climate change.

MS1 Curriculum offerings:

- 1. CPR L39B: Food Policy, Access, and the Structural Determinants of Nutrition
- 2. MCM TBL8: Environmental Toxins focus on lead poisoning including in water, soil, and built environment, and includes discussion of inequities

Clerkiship offering: Climate Change: Implications for Clinical Practice and Population Health

9. Does your <u>medical school</u> curriculum address the outsized impact of climate change on marginalized populations such as those with low SES, women, communities of color, Indigenous communities, children, homeless populations, and older adults?

- This topic was explored **in depth** by the **core** curriculum.
- 2 This topic was **briefly** covered in the **core** curriculum.
- 1 This topic was covered in **elective** coursework.
- 0 This topic was **not** covered.

Score explanation:

UC Davis School of Medicine offers both preclinical and clinical experiences to address the outsized impact of climate change on marginalized populations such as those with low SES, women, communities of color, Indigenous communities, children, homeless populations, and older adults.

MS1 Offerings:

1. CPR TBL45: Heat Stroke - includes a discussion of which social/economic groups are most vulnerable, and how climate change affects risk

Clerkship offering: Climate Change: Implications for Clinical Practice and Population Health

10. Does your <u>medical school</u> curriculum address the unequal regional health impacts of climate change globally?	
3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.

Score explanation:

UC Davis School of Medicine offers 1 elective course during the 3rd and 4th year to address unequal regional health impacts of climate change globally, titled "Climate Change: Implications for Clinical Practice and Population Health"

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

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

Score explanation:

UC Davis School of Medicine offers both preclinical and clinical experiences to address reproductive health effects of industry-related environmental toxins (e.g. air pollution, pesticides).

MS1 Offering:

1. MCM TBL8: Environmental Toxins - focus on lead poisoning including in water, soil, and built environment, and includes discussion of inequities

Clerkiship offering: Climate Change: Implications for Clinical Practice and Population Health

12. Does your medical school curriculum address important human-caused environmental threats that are relevant to the university's surrounding community? 3 This topic was explored in depth by the core curriculum. 2 This topic was briefly covered in the core curriculum. 1 This topic was covered in elective coursework. 0 This topic was not covered.

Score explanation: This topic is covered in the MCM TBL8: Environmental Toxins which focuses on lead poisoning including in water, soil, and built environment, and includes discussion of inequities and it is also covered in M3/M4 elective "Climate Change: Implications for Clinical Practice and Population Health."

	13. To what extent does your <u>medical school</u> emphasize the importance of Indigenous knowledge and value systems as essential components of planetary health solutions?	
3	Indigenous knowledge and value systems are integrated throughout the medical school's planetary health education	
2	Indigenous knowledge and value systems as essential components of planetary health solutions are included briefly in the core curriculum.	
1	Indigenous knowledge and value systems as essential components of planetary health solutions are included in elective coursework.	

Score explanation: This is covered in the M3/M4 elective Climate Change: Implications for Clinical Practice and Population Health course

0

This topic was **not** covered.

14. Does your <u>medical school</u> curriculum address the outsized impact of anthropogenic environmental toxins on marginalized populations such as those with low SES, women, communities of color, children, homeless populations, Indigenous populations, and older adults?

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

Score explanation: These topics were covered in MCM TBL8: Environmental Toxins which focuses on lead poisoning including in water, soil, and built environment, and includes discussion of inequities as well as CPR L84: Health Equity and Environmental Justice and the M3/M4 elective "Climate Change: Implications for Clinical Practice and Population Health."

Curriculum: Sustainability

15. Does your <u>medical school</u> curriculum address the environmental and health co-benefits of a plant-based diet?	
3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.

Score explanation: This topic is covered in asynchronous Lifestyle Medicine lectures and is available for in-depth investigation as an elective during the summer Identity formation through REflection, Social analysist, Team-ORientation and Enrichment (I-RESTORE) intersession.

16. Does your <u>medical school</u> curriculum address the carbon footprint of healthcare systems?	
3	This topic was explored in depth by the core curriculum
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.

Score explanation: This is covered in the M3/M4 elective Climate Change: Implications for Clinical Practice and Population Health course

	17. Does your <u>medical school</u> curriculum cover these components of sustainable clinical practice in the <u>core</u> curriculum? (points for each)	
2	The health and environmental co-benefits of avoiding over-medicalisation, over-investigation and/or over-treatment	
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 fulfill this metric.	
1	The health and environmental co-benefits of non-pharmaceutical management of conditions where appropriate such as exercise or yoga classes for type 2 diabetes; social group activities such as gardening for mental health conditions; active transport such as bicycle schemes. This is commonly known as social prescribing in the UK.	
1	Environmental impact of surgical healthcare on planetary health and the climate crisis, and how can it be mitigated	

The impact of anaesthetic gases on the healthcare carbon footprint and ways to reduce anesthesia environmental impacts, such as total intravenous anaesthesia or choosing less environmentally harmful anaesthetic gas options with reduced greenhouse gas emissions

The impact of inhalers on the healthcare carbon footprint and the environmental benefit of dry powdered inhalers over metered dose inhalers.

Waste production within healthcare clinics and strategies for reducing waste in clinical activities (e.g. single use items in the inpatient or outpatient setting)

Score explanation: These are included longitudinally in the preclinical curriculum specifically in the cardiology/pulmonology/renal block (CPR) and asynchronous lifestyle medicine lectures. Additionally, these are discussed in the M3/M4 elective Climate Change: Implications for Clinical Practice and Population Health course and others are longitudinally discussed throughout the team-based learning sessions and Lifestyle medicine lectures.

Curriculum: Clinical Applications

- 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?

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

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

 0 No, there are not strategies introduced for having conversations with patients about climate change change

 Score explanation: We contacted clinical course directors to see if this was included in the course directives however it was not.
- 19. In training for patient encounters, does your medical school's curriculum introduce strategies for taking an environmental history or exposure history?

 2 Yes, the core curriculum includes strategies for taking an environmental history.

 1 Only elective coursework includes strategies for taking an environmental history.

 No, the curriculum does not include strategies for taking an environmental history.

 Score explanation: We contacted clinical course directors to see if this was included in the course directives however it was not.

Curriculum: Administrative Support for Planetary Health

20. Is your medical school currently in the process of implementing or improving Education for

Sustainable Healthcare (ESH)/planetary health education?	
4	Yes, the medical school is currently in the process of making major improvements to ESH/planetary health education.
2	Yes, the medical school is currently in the process of making minor improvements to ESH/planetary health education.
0	No, there are no improvements to planetary health education in progress.

Score explanation: We contacted clinical course directors and were unable to identify this in the curriculum.

21. How well are the aforementioned planetary health/Education for Sustainable Healthcare topics integrated longitudinally into the core curriculum? 6 Planetary health/ESH topics are well integrated into the core medical school curriculum. 4 Some planetary health/ESH topics are appropriately integrated into the core medical student curriculum. 2 Planetary health/ESH is not integrated and is primarily addressed in (a) standalone lecture(s).

Score explanation: This is discussed in the M3/M4 elective Climate Change: Implications for Clinical Practice and Population Health course, however work is being done to integrate topics into the longitudinal curriculum.

There is **minimal/no** education for sustainable healthcare.

22. Does your <u>medical school</u> 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?

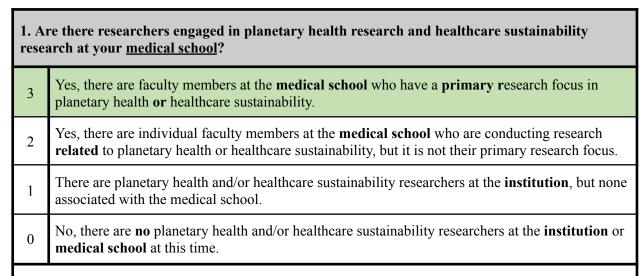
- Yes, the medical school has a specific faculty/staff member responsible for overseeing curricular integration of planetary health and sustainable healthcare
- No, the **medical school** does **not** have a specific faculty/staff member responsible for overseeing curricular integration of planetary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

Score explanation: There are faculty that provide lectures on planetary health and sustainable healthcare and there is a specific faculty member that has begun to develop and implement these topics into the preclinical longitudinal curriculum.

Section Total (37 out of 72)	51.39%
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Interdisciplinary Research

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



Score explanation: The UC Davis School of Medicine conducts planetary health research through the One Health institute, its Environmental and Occupational Health division under the Department of Public Health Sciences, as well as its Population Sciences and Health Disparities division under the UC Davis Comprehensive Cancer Center. UC Davis School of Medicine funds an annual Quality Improvement Forum for residents and medical students interested in conducting a sustainability QI project..

Is there a dedicated department or institute for interdisciplinary planetary health research at your institution? There is at least one dedicated department or institute for interdisciplinary planetary health research. 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. There is an Occupational and Environmental Health department, but no interdisciplinary department or institute for planetary health research. There is no dedicated department or institute.

Score explanation: The UC Davis School of Medicine <u>Environmental and Occupational Health</u> division under the Department of Public Health Sciences encompasses a wide variety of departments and programs to investigate the impact of the environment on human health with the goal of improving

these health outcomes. Additionally, the <u>One Health</u> Institute conducts research that includes researchers from the UC Davis School of Medicine.

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 <u>medical school</u>?

- 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.
- Yes, there is a process in which community members impacted by climate and environmental injustice **advise** the climate + environmental research agenda.
- No, but there are **current efforts** to establish a process for community members to advise or make decisions on the research agenda.
- There is **no** process, and **no** efforts to create such a process.

Score explanation: Community Engagement Core (CEC) under the UC Davis Environmental Health Sciences Center facilitates connections between scientists and the communities where they do their work. The CEC includes the EHSC's Community Stakeholder Advisory Committee (CSTAC) which includes community-based organizations to advise on the design and implementation of environmental health science research at UC Davis.

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

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

4

Score explanation: UC Davis has a webpage that centralizes its main campus efforts toward sustainability. However, the website <u>briefly mentions</u> the health campus and does not organize its research to include research ongoing at UC Davis School of Medicine. Additionally, relevant funding opportunities are not navigable on this webpage.

5. Has your <u>institution</u> recently hosted a conference or symposium on topics related to planetary health?

Yes, the **medical school** has hosted at least one conference or symposium on topics related to planetary health in the past year.

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

Score explanation: UC Davis School of Medicine is involved in hosting the annual NorCal Symposium on Climate, Health, Equity alongside other medical schools. Additionally, UC Davis hosts an annual Sustainability Summit on its main campus but with a focus on its undergraduate and graduate programs as well as faculty working on the main campus.

6. Is your <u>medical school</u> a member of a national or international planetary health or ESH organization?

- Yes, the medical school is a member of a national or international planetary health **or** ESH organization
- 0 No, the medical school is **not** a member of such an organization

Score explanation: Although based in the School of Veterinary Medicine, the <u>One Health</u> Institute does involve the UC Davis Medical School in its work whether it be its research, curriculum offerings, or from a One Health-centered focus toward patient care <u>in our student run clinics</u>. Additionally, our hospital is an active participant in <u>Practice Greenhealth</u> and the <u>California Health Care Climate</u> <u>Alliance</u> which is under the global <u>Health Care Without Harm</u>.

Section Total (15 out of 17) 88.24%

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Community Outreach and Advocacy

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

1. Does your medical school partner with community organizations to promote planetary and environmental health? Yes, the medical school meaningfully partners with multiple community organizations to promote planetary and environmental health. Yes, the medical school meaningfully partners with one community organization to promote planetary and environmental health. The institution partners with community organizations, but the medical school is not part of that partnership. No, there is no such meaningful community partnership.

Score explanation: UC Davis School of Medicine's Division of Environmental and Occupational Health partners with the <u>TENDR Program</u> and the <u>Western Center for Agricultural Health and Safety</u> which engage the local community to enable more effective lobbying and improve conditions for those adversely affected by environmental issues.

2. Does your medical school offer community-facing courses or events regarding planetary health? 3 The medical school offers community-facing courses or events at least once every year. 2 The medical school offers courses or events open to the community at least once per year, but they are not primarily created for a community audience. 1 The institution has offered community-facing courses or events, but the medical school was not involved in planning those courses or events. O The institution/medical school have not offered such community-facing courses or events.

Score explanation: As part of the first year I-RESTORE curriculum, students have the option to enroll in the Rx One Health Field Institute over the summer. This course is open to all but is catered toward graduate students and early career professionals in the STEM field.

3. Does your medical school have regular coverage of issues related to planetary health and/or

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

Score explanation: There are communication updates regarding planetary health from the institution's Sustainability Department, but this service is opt-in and is not advertised to the medical school campus. Updates regarding sustainable healthcare from the UC Davis Health system are not shared with students but are shared with the UC Davis Health Sustainability committee.

- 4. Does the <u>institution</u> or <u>main affiliated hospital trust</u> 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.
- Yes, the **institution** or **main affiliated hospital trust** offers one course relating to planetary health and/or sustainable healthcare for post-graduate providers
- There are **no** such accessible courses for post-graduate providers

Score explanation: UC Davis School of Medicine is involved in hosting the annual NorCal Symposium on Climate. Health, Equity alongside other medical schools which discusses climate change and health equity from a healthcare lens and counts toward Continuing Medical Education (CME) credits. The UC Davis School of Medicine also hosts an annual Quality Improvement Forum for medical providers which also count toward CME credits.

- 5. Does your <u>medical school</u> or its primary <u>affiliated hospital</u> have accessible educational materials for patients about environmental health exposures?
 - 2 Yes, all affiliated hospitals have accessible educational materials for patients.
 - 1 **Some** affiliated hospitals have accessible educational materials for patients.
 - No affiliated medical centers have accessible educational materials for patients.

Score explanation: The UC Davis MIND Institute website includes <u>resources</u> for environmental exposures related to Children's Environmental Health. The UC Davis Environmental Health website also includes resources regarding <u>lead exposure</u>.

6. Does your medical school or its primary affiliated hospital have accessible educational

materials for patients about climate change and health impacts?	
2	Yes, all affiliated hospitals have accessible educational materials for patients.
1	Some affiliated hospitals have accessible educational materials for patients.
0	No affiliated hospitals have accessible educational materials for patients.

Score explanation: Online resources are not available to patients regarding this topic. We contacted the emergency management team and were unable to identify any accessible education materials for patients regarding climate change health impacts.

Section Total (8 out of 14)	57.14%
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Support for Student-Led Planetary Health Initiatives

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

1. Does your <u>medical school</u> or your <u>institution</u> offer support for medical students interested in enacting a sustainability initiative/QI project?	
2	Yes, the medical school or institution <i>either</i> offers grants for students to enact sustainability initiatives/QI projects <i>or</i> sustainability QI projects are part of the core curriculum.
1	The medical school or institution encourages sustainability QI projects (to fulfill clerkship or longitudinal requirements) and offers resources to help students succeed in these projects, but there is no student funding available and there is no requirement to participate.
0	No, neither the medical school or the institution offer opportunities or support for sustainability initiatives or QI projects.

Score explanation: UC Davis School of Medicine funds an annual <u>Quality Improvement Forum</u> for residents and medical students with a special category for Sustainability QI projects for those interested in coducting a sustainability QI project.

2. Does your <u>institution</u> offer opportunities for medical students to do research related to planetary health and/or sustainable healthcare?

- The **institution** has a **specific** research program or fellowship for students interested in doing planetary health/sustainable healthcare research.

 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.
- There are **no opportunities** for students to engage in planetary health/sustainable healthcare research.

Score explanation: As part of the <u>I-RESTORE curriculum</u>, students have the option to pursue research in Global Health and sustainability related projects for four weeks of selective course work during the eight-week summer block between years 1 and 2

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

The **medical school** has a webpage with specific information related to planetary health or sustainable healthcare that includes up-to-date information on relevant initiatives and contact information of potential mentors.

There is a **medical school** webpage that features some information on projects and mentors within planetary health and sustainable healthcare within the medical school, but it lacks key information.

There is **no medical-school** specific webpage for locating planetary health and/or sustainable healthcare projects or mentors.

Score explanation: UC Davis School of Medicine has a <u>sustainability webpage</u> but it is limited in its information aside from contact information.

- 4. Does your <u>medical school</u> 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 organization **with faculty support** at my medical school dedicated to planetary health or sustainability in healthcare.
- Yes, there is a student organization at my medical school dedicated to planetary health or sustainability in healthcare but it **lacks faculty support.**
- No, there is **not** a student organization at my institution dedicated to planetary health or sustainability in healthcare.

Score explanation: UC Davis has one student organization, Sustainability Through Environmentally Thoughtful Healthcare (STETH), that is dedicated to planetary health and sustainability in healthcare with faculty support.

- 5. Is there a student liaison representing sustainability interests who serves on a <u>medical school</u> or <u>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 medical school or institutional decision-making council/committee.
- 0 No, there is no such student representative.

Score explanation: Although students are welcome to join the UC Davis Health Sustainability Committee meeting, there is no formal student representative that reports to the greater student body. There are representatives on the student council that advocate for curriculum reform but their focus is not toward sustainability best practices.

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)

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

Score explanation: UC Davis institution is a leading university in agriculture and sustainability projects. Examples of this include the <u>student run farm</u>, <u>community engagement opportunities</u>, <u>cultural installations</u>, <u>tree planting programs</u>, and <u>outdoors programs</u>. These events are open to medical students, but it should be noted they occur on main campus and thus are not as accessible.

Section Total (13 out of 15)	86.67%
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Campus Sustainability

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

1. Does your medical school and/or institution have an Office of Sustainability?		
3	Yes, there is an Office of Sustainability with multiple full-time staff dedicated to campus sustainability. If the Office of Sustainability serves the entire campus, there is at least one designated staff member for sustainability at the hospital and/or medical school.	
2	There is an Office of Sustainability with one or more full-time staff dedicated to campus sustainability, but no specific staff member in charge of medical school and/or hospital sustainability.	
1	There are no salaried sustainability staff , but there is a sustainability task force or committee	
0	There are no staff members or task force responsible for overseeing campus sustainability	
Score explanation: Our medical campus has a dedicated <u>committee to sustainability</u> and a full-time director, Kristina Cullen.		

2. H	2. How ambitious is your institution/medical school plan to reduce its own carbon footprint?	
5	The institution/medical school has a written and approved plan to achieve carbon neutrality by 2030	
3	The institution/medical school has a written and approved plan to achieve carbon neutrality by 2040	
1	The institution/medical school has a stated goal of carbon neutrality by 2040 but has not created a plan to reach that goal or the plan is inadequate	
0	The institution/medical school does not meet any of the requirements listed above	
	Score explanation: University of California aims to have their campuses carbon neutral by 2025. However, this plan includes purchase of offsets that may not be carbon neutral. The UC Davis campus has agreed toward true carbon neutrality but is unlikely to reach this goal by 2025. The UC Davis Health also has a site specific plan to have all energy from carbon-free sources by 2035.	

3. Do buildings/infrastructure used by the <u>medical school</u> for teaching (not including the hospital) utilize renewable energy?	
3	Yes medical school buildings are 100% powered by renewable energy
2	Medical school buildings source >80% of energy needs from off-site and/or on-site renewable energy.
1	Medical school buildings source >20% of energy needs from off-site and/or on-site renewable energy.
0	Medical school buildings source <20% of energy needs from off-site and/or on-site renewable energy.

Score explanation: A majority of the campus is powered by a <u>Cogeneration Plant</u> that runs on natural gas. Additional energy needs are purchased from SMUD and are reported to derive from green energy options such as local solar farms or western-region green power sources.

4. Are sustainable building practices utilized for new and old buildings on the <u>medical school</u> campus, with design and construction of new buildings and remodeling of old buildings conforming to a published sustainability rating system or building code/guideline?

- Yes, sustainable building practices are utilized for new buildings on the medical school campus and the **majority** of old buildings **have been retrofitted** to be more sustainable.
- 2 Sustainable building practices are utilized for new buildings on the medical school campus, but most old buildings have **not been retrofitted.**
- 1 Sustainable building practices are **inadequately or incompletely** implemented for new buildings.
- O Sustainability is **not considered** in the construction of new buildings.

Score explanation: All new campus buildings must be LEED certified per the <u>UCOP sustainability</u> <u>policy</u>. Within our campus, The North Addition Office Building is LEED certified and other buildings have undergone energy audits and upgrades to optimize efficiency.

5. Has the <u>medical school</u> implemented strategies to encourage and provide environmentally-friendly transportation options for students and reduce the environmental impact of commuting?

- Yes, the medical school has implemented strategies to encourage and provide **environmentally-friendly transportation options** such as safe active transport, public transport, or carpooling and these options are well-utilized by students. Alternatively, the campus location is not amenable to unsustainable forms of transportation by default.
- The medical school has implemented **some** strategies to provide environmentally-friendly transportation options, but the options are **unsatisfactorily** accessible or advertised.
- The medical school has **not** implemented strategies to encourage and provide environmentally-friendly transportation options.

Score explanation: Students have access to bike infrastructure and the surrounding streets have bike lanes and routes. There is also a shuttle that transports students and staff for free between the medical campus and main campus. However, this <u>bus</u> has limited stops and serves little use to the medical students that live outside of the immediate Oak Park, Sacramento area. Additionally, beginning in 1st year, some students are asked to commute to areas upward of 20 miles for their longitudinal clinical experiences with no organization for carpools or instructions for sustainable transportation.

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

- Yes, the medical school has **both** compost **and** recycling programs accessible to students and faculty.
- The medical school has **either** recycling **or** compost programs accessible to students and faculty, but not both.
- There is **no** compost or recycling program at the medical school.

Score explanation: Recycling bins are available only in classrooms and within the hospital on the medical campus. Currently, the sustainability committee is working towards instituting a campus wide compost program.

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

- Yes, the medical school has a**dequate s**ustainability requirements for food and beverages, including meat-free days or no red-meat, and **is engaged** in efforts to increase food and beverage sustainability.
- There are sustainability guidelines for food and beverages, but they are **insufficient or optional**. The medical school **is engaged** in efforts to increase food and beverage sustainability.
- There are sustainability guidelines for food and beverages, but they are **insufficient or optional.**The medical school is **not** engaged in efforts to increase food and beverage sustainability.
- 0 There are **no** sustainability guidelines for food and beverages.

3

Score explanation: As of 2018, UC Davis Health is committed to providing the <u>largest farm-to-fork</u> <u>service</u> in the UC System. In 2019, <u>UC Davis Health was the first health system</u> in the nation to participate in the Good Food 100 Restaurants. UC Davis Health has also received recognition by the <u>James Beard Foundation</u> as a <u>Smart Catch Leader</u> in 2019 and 2020

8. Does the <u>medical school</u> or <u>institution</u> apply sustainability criteria when making decisions about supply procurement?

Yes, the medical school has **adequate** sustainability requirements for supply procurement **and** is **engaged** in efforts to increase sustainability of procurement.

There are sustainability guidelines for supply procurement, but they are **insufficient or optional.**The medical school is **engaged** in efforts to increase sustainability of procurement.

There are sustainability guidelines for supply procurement, but they are **insufficient or optional.**The medical school is **not engaged** in efforts to increase sustainability of procurement.

There are **no** sustainability guidelines for supply procurement.

Score explanation: The UC Davis School of Medicine is obliged to follow the UCOP sustainable procurement guidelines found <u>here</u>.

9. Are there sustainability requirements or guidelines for events hosted at the medical school? 2 Every event hosted at the medical school must abide by sustainability criteria. 1 The medical school strongly recommends or incentivizes sustainability measures, but they are not required. 0 There are no sustainability guidelines for medical school events.

Score explanation: The institution encourages sustainability measures for events by providing <u>guidelines</u> for sustainable event planning, but this is not required for events within the institution or medical school.

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

- Yes, the medical school has **programs** and **initiatives** to assist with making lab spaces more environmentally sustainable.
- There are **guidelines** on how to make lab spaces more environmentally sustainable, but not programs or initiatives.
- There are **no** efforts at the medical school to make lab spaces more sustainable.

Score explanation: There is a committee at the medical campus addressing sustainability in research labs in the school of medicine, but there are no posted guidelines.

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.
- 3 The institution is **entirely divested** from fossil fuels.
- The institution has **partially divested** from fossil fuel companies **or** has made a **commitment to fully divest**, but **currently** still has fossil fuel investments.

1	The institution has not divested from fossil-fuel companies, but faculty and/or students are conducting organized advocacy for divestment.
0	Yes, the institution has investments with fossil-fuel companies and there have been no efforts to change that.

Score explanation: As of $\underline{2020}$, the University of California is fully divested from fossil-fuel companies including a reinvestment into renewable energy of \$1 billion.

Section Total (24 out of 32)	75%
Section Total (24 out of 32)	1370

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Grading

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%		
В	60% - 79%		
С	40% - 59%		
D	20% - 39%		
F	0% - 19%		

Planetary Health Grades for the UC Davis School of Medicine

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

Section	Raw Score %	Letter Grade
Planetary Health Curriculum (30%)	51.39%	С
Interdisciplinary Research (17.5%)	88.24%	A
Community Outreach and Advocacy (17.5%)	57.14%	C+
Support for Student-led Planetary Health Initiatives (17.5%)	86.67%	A
Campus Sustainability (17.5%)	75.00%	B+
Institutional Grade	69.15%	В