



Planetary Health Report Card (Medicine): *Johns Hopkins School of Medicine*



JOHNS HOPKINS
M E D I C I N E

2023-2024 Contributing Team:

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Summary of Findings

Overall	C
<u>Curriculum</u>	D
<ul style="list-style-type: none"> Johns Hopkins University School of Medicine includes a cursory overview of planetary health by offering a Planetary Health elective and a Disaster Medicine elective that involve lectures and seminar work during first year. These courses are not longitudinally integrated into the core curriculum. Recommendations: Planetary health should be included in the core curriculum during preclinical years. Clinical training should also include conversations about planetary health with patients. 	
<u>Interdisciplinary Research</u>	B
<ul style="list-style-type: none"> The Johns Hopkins University School of Medicine does not have a dedicated department for conducting research in Planetary Health. However, there is a cross-divisional department of Environmental Health and Engineering, and there are faculty with joint appointments with the School of Medicine. The greater institution of John Hopkins is active in planetary health research, but there is still a need for the School of Medicine to be involved in these efforts. Recommendations: The School of Medicine could foster more direct and active relationships with the Department of Environmental Health and Engineering in order to facilitate medical student involvement in planetary health research. A central database with research opportunities could also foster interdisciplinary collaboration. 	
<u>Community Outreach and Advocacy</u>	C
<ul style="list-style-type: none"> The Johns Hopkins University and Medicine include planetary health information, news, and events in its outreach. Examples include educational materials about environmental exposures and partnering with multiple organizations to offer volunteering opportunities for environmental causes. However, this outreach is often not tailored specifically for planetary health purposes. Recommendations: We recommend performing more planetary health outreach to both the Johns Hopkins community and the wider Baltimore community, especially in terms of programming. 	
<u>Support for Student-Led Initiatives</u>	B
<ul style="list-style-type: none"> Johns Hopkins University supports environmental causes through faculty-sponsored student groups, student representation on the university-wide sustainability council, funding for entrepreneurial sustainability projects. However, students in the School of Medicine wishing to get involved in planetary health efforts must do so on their own initiatives. Recommendations: We recommend increased support for medical school-specific student-led environmental initiatives primarily by creating a website for planetary health opportunities and resources. 	
<u>Campus Sustainability</u>	C-
<ul style="list-style-type: none"> Johns Hopkins University has some institutional sustainability policies, such as compost and recycling programs, initiatives to improve the sustainability of research labs, and a commitment to divesting from coal companies. However, the university lacks key guidelines for goals such as renewable energy and carbon neutrality. Recommendations: We recommend implementing guidelines for sustainable medical student events, hiring personnel to oversee the sustainability of the medical school and hospital, and investigating possibilities for powering the campus using renewable energy and achieving carbon neutrality. 	

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

Planetary Health Curriculum

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

Curriculum: General

1.1. 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.
<p><i>Score explanation: The Johns Hopkins University School of Medicine offers an annual Planetary Health Selective in the fall semester as an optional component of the Foundations of Public Health course. This is a student-led elective that takes place over a two or three-week period, with two or three sessions lasting 1.5-2 hours per week. The topics covered by the selective may vary each year; previous years. The most recent iteration of this course in Fall 2023 covered an introduction to the topic of planetary health, food insecurity, local environmental justice issues, and how to advocate for environmental and climate health as a member of the healthcare field. Components of the Fall 2023 course included a lecture on hospital system waste, a talk from a physician leading the JHUSOM Perio-Operative Sustainability Initiative, and class discussions on the role of healthcare workers in planetary health. Learning objectives included defining and describing planetary health, describing the relationships between the climate change, human health, public health, diet, and environmental hazards, analyze the contributions of the health system towards environmental change, discussing the role and impact of healthcare workers in environmental health, learning how to engage respectfully and effectively with the community to further environmental justice, and learning how to positively impact environmental health as a healthcare worker.</i></p>	

Curriculum: Health Effects of Climate Change

1.2. Does your <u>medical school</u> curriculum address the relationship between extreme heat, health risks, and climate change?	
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.
<p><i>Score explanation: Score explanation: A lecture on “Chronic Lung Disease in Preterm Infants” in the Pulmonology block of the core curriculum includes weather/temperature extremes on a bulleted list of potentially detrimental environmental exposures. This topic was also briefly covered in the 2023 Planetary Health Selective course (2 week course, ~1.5-2 hours a week) that is offered every year as an elective in the first year public health course. This elective is taught by second-year medical students that lead the Planetary Health Alliance student organisation. The TIME: Disaster Medicine course (3 day course, 8am - 5pm) that is offered as an elective to first-years and is taught by global health and public health faculty briefly mentions drought and extreme temperatures on a list of potential disasters impacting health.</i></p>	

1.3. Does your <u>medical school</u> curriculum address the impacts of extreme weather events on individual health and/or on healthcare systems?	
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.
<p><i>Score explanation: A lecture on “Chronic Lung Disease in Preterm Infants” in the Pulmonology block of the core curriculum includes weather/temperature extremes on a bulleted list of potentially detrimental environmental exposures. This topic was also briefly covered in the 2023 Planetary Health Selective course (2 week course, ~1.5-2 hours a week) that is offered every year as an elective in the first year public health course. This elective is taught by second-year medical students that lead the Planetary Health Alliance student organisation. The TIME: Disaster Medicine course (3 day course, 8am - 5pm) that is offered as an elective to first-years and is taught by global health and public health faculty covers extreme weather events and natural disasters impacting health and healthcare systems.</i></p>	

1.4. Does your <u>medical school</u> curriculum address the impact of climate change on the changing patterns of infectious diseases?	
3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.
<p><i>Score explanation: The Microbiology block of the core curriculum contains two lectures, “Introduction to Infectious Diseases, Bacterial Physiology, and Genetics” and “Vector-borne Viruses: Zoonoses (Dengue)” that briefly list climate change as a potential contributing factor to the changing patterns of</i></p>	

infectious diseases. This topic was also briefly covered in the 2023 Planetary Health Selective course (2 week course, ~1.5-2 hours a week) that is offered every year as an elective in the first year public health course. This elective is taught by second-year medical students that lead the Planetary Health Alliance student organization.

1.5. Does your medical school curriculum address the respiratory health effects of climate change 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: A lecture on "Chronic Lung Disease in Preterm Infants" in the Pulmonology block of the core curriculum includes air pollution on a bulleted list of potentially detrimental environmental exposures. This topic was also briefly covered in the 2023 Planetary Health Selective course (2 week course, ~1.5-2 hours a week) that is offered every year as an elective in the first year public health course. This elective is taught by second-year medical students that lead the Planetary Health Alliance student organisation. The TIME: Global Health course (3 day course, 8am - 5pm) that is offered as an elective to first-years and is taught by global health and public health faculty contains multiple slides about the health effects of indoor and outdoor air pollution.

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

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

Score explanation: This topic was also briefly covered in the 2023 Planetary Health Selective course through two presentations covering the definition of planetary health, the relationships between the climate change, human health, public health, diet, and environmental hazards, and environmental justice issues in Baltimore. Students also engaged in discussion and Q&A sessions about these topics after the presentations. This course (2 week course, ~1.5-2 hours a week) is offered every year as an elective in the first year public health course. This elective is taught by second-year medical students that lead the Planetary Health Alliance student organization.

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

3	This topic was explored in depth by the core curriculum.
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2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.
<p><i>Score explanation: This topic was also briefly covered in the 2023 Planetary Health Selective course through two presentations covering the definition of planetary health, the relationships between the climate change, human health, public health, diet, and environmental hazards, and environmental justice issues in Baltimore. Students also engaged in discussion and Q&A sessions about these topics after the presentations. This course (2 week course, ~1.5-2 hours a week) that is offered every year as an elective in the first year public health course. The TIME: Disaster Medicine course (3 day course, 8am - 5pm) that is offered as an elective to first-years and is taught by global health and public health faculty also briefly mentions the mental health effects of natural disasters.</i></p>	

1.8. Does your <u>medical school</u> curriculum address the relationships between health, individual patient food and water security, ecosystem health, and climate change?	
3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.
<p><i>Score explanation: This topic was also briefly covered in the 2023 Planetary Health Selective course through two presentations covering the definition of planetary health, the relationships between the climate change, human health, public health, diet, and environmental hazards, and environmental justice issues in Baltimore. Students also engaged in discussion and Q&A sessions about these topics after the presentations. This course (2 week course, ~1.5-2 hours a week) that is offered every year as an elective in the first year public health course. This elective is taught by second-year medical students that lead the Planetary Health Alliance student organization.</i></p>	

1.9. 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?	
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.
<p><i>Score explanation: This topic was also briefly covered in the 2023 Planetary Health Selective course (2 week course, ~1.5-2 hours a week) that is offered every year as an elective in the first year public health course. Presentations in this course emphasized environmental justice and the role of climate change in creating and worsening environmental justice issues, especially in Baltimore. Students also engaged in discussion and Q&A sessions about these topics after the presentations. This elective is</i></p>	

taught by second-year medical students that lead the Planetary Health Alliance student organization. The *TIME: Global Health* course (3 day course, 8am - 5pm) and the *TIME: Disaster Medicine* course (3 day course, 8am - 5pm) that are offered as electives to first-years and are taught by global health and public health faculty briefly mention vulnerable populations.

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

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

Score explanation: The TIME: Global Health course (3 day course, 8am - 5pm) and the TIME: Disaster Medicine course (3 day course, 8am - 5pm), that are offered as electives to first-years and are taught by global health and public health faculty, briefly mention vulnerable global regions.

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

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

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

Score explanation: To our knowledge, this topic is not covered in the curriculum or elsewhere.

1.12. 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 was briefly covered in the 2023 Planetary Health Selective course (2 week course, ~1.5-2 hours a week) that is offered every year as an elective in the first year public health course. Presentations in this course emphasized medical waste as an environmental threat and

several environmental justice issues in Baltimore, such as landfill location and air pollution. Students also engaged in discussion and Q&A sessions about these topics after the presentations. This elective is taught by second-year medical students that lead the Planetary Health Alliance student organization.

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

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

Score explanation: To our knowledge, this topic is not covered in the curriculum or elsewhere.

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

3	This topic was explored in depth by the core curriculum.
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 was briefly covered in the 2023 Planetary Health Selective course (2 week course, ~1.5-2 hours a week) that is offered every year as an elective in the first year public health course. Presentations in this course emphasized medical waste as an environmental threat and several environmental justice issues disproportionately affecting marginalized communities in Baltimore, such as landfill location and air pollution. Students also engaged in discussion and Q&A sessions about these topics after the presentations. This elective is taught by second-year medical students that lead the Planetary Health Alliance student organization.

Curriculum: Sustainability

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

3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.

1	This topic was covered in elective coursework.
0	This topic was not covered.
<p><i>Score explanation: Accommodating to patients with plant-based diets was briefly discussed as part of the TIME: Nutrition course, but the environmental and health benefits of these diets were not covered in the curriculum.</i></p>	

1.16. 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.
<p><i>Score explanation: This topic was briefly covered in the 2023 Planetary Health Selective course (2 week course, ~1.5-2 hours a week) that is offered every year as an elective in the first year public health course. One presentation and reading assignment in this course emphasized hospital system emissions from an anesthesiology standpoint. Students also engaged in a discussion and Q&A session about medical waste and the role of healthcare workers in reducing the carbon footprint of the healthcare system. This elective is taught by second-year medical students that lead the Planetary Health Alliance student organization.</i></p>	

1.17. Does your <u>medical school</u> curriculum cover these components of sustainable clinical practice in the <u>core</u> curriculum? (points for each)	
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
1	The impact of anaesthetic gases on the healthcare carbon footprint and ways to reduce anaesthesia environmental impacts, such as total intravenous anaesthesia or choosing less environmentally harmful anaesthetic gas options with reduced greenhouse gas emissions
1	The impact of inhalers on the healthcare carbon footprint and the environmental benefit of dry powdered inhalers over metered dose inhalers.

1	Waste production within healthcare clinics and strategies for reducing waste in clinical activities (e.g. single use items in the inpatient or outpatient setting)
	<i>Score explanation: While many of these topics were discussed in the 2023 Planetary Health Selective course, none of these topics were a part of the core medical school curriculum.</i>

Curriculum: Clinical Applications

1.18. In training for patient encounters, does your <u>medical school's</u> 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
<i>Score explanation: To our knowledge, strategies to communicate the health effect of climate change to patients are not discussed in the curriculum or elsewhere.</i>	

1.19. In training for patient encounters, does your <u>medical school's</u> curriculum introduce strategies for taking an environmental history or exposure history?	
2	Yes, the core curriculum includes strategies for taking an environmental history.
1	Only elective coursework includes strategies for taking an environmental history.
0	No, the curriculum does not include strategies for taking an environmental history.
<i>Score explanation: In Clinical Foundations of Medicine during the M1 year, students are instructed on taking a social history, which includes asking questions about environmental and occupational exposures. Students are offered many opportunities to practice this aspect of history taking with standardized patients. Furthermore, taking a thorough social history is underscored in the Longitudinal Ambulatory Clerkship course, where students work with preceptors in local clinics to develop their history taking, physical exam, and clinical reasoning skills.</i>	

Curriculum: Administrative Support for Planetary Health

1.20. Is your <u>medical school</u> 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.
<p><i>Score explanation: Johns Hopkins University School of Medicine maintains the Planetary Health Selective course (2 week course, ~1.5-2 hours a week) that is offered every year as an elective in the first year public health course. This elective is taught by second-year medical students that lead the Planetary Health Alliance student organization. Additionally, some planetary health topics are covered in the Organ Systems Foundations of Medicine: Pulmonary course. There is interest from both student groups and faculty involved in sustainability in incorporating more planetary health content into the core curriculum, but no concrete steps have been taken at this point.</i></p>	

1.21. How well are the aforementioned planetary health/Education for Sustainable Healthcare topics integrated longitudinally into the <u>core</u> curriculum?	
6	Planetary health/ESH topics are well integrated into the core medical school curriculum.
4	Some planetary health/ESH topics are appropriately integrated into the core medical student curriculum.
2	Planetary health/ESH is not integrated and is primarily addressed in (a) standalone lecture(s) .
0	There is minimal/no education for sustainable healthcare.
<p><i>Score explanation: Some planetary health topics are integrated into the core curriculum, particularly in the Organ Systems Foundations of Medicine: Pulmonary and Organ Systems Foundations of Medicine: Infectious Disease courses, including information about risks associated with environmental exposures. Beyond a couple of lectures in these courses, planetary health topics are only covered in elective courses, including the Planetary Health Selective, TIME: Global Health, and TIME: Disaster Medicine courses.</i></p>	

1.22. 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?	
1	Yes , the medical school has a specific faculty/staff member responsible for overseeing curricular integration of planetary health and sustainable healthcare
0	No , the medical school does not have a specific faculty/staff member responsible for overseeing curricular integration of planetary health and sustainable healthcare.
<p><i>Score explanation: The medical school does not currently designate a faculty member to oversee the incorporation of planetary health and sustainable healthcare into the medical curriculum.</i></p>	

Section Total (24 out of 72)	33%
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Back to Summary Page [here](#)

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

Interdisciplinary Research

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

2.1. Are there researchers engaged in planetary health research and healthcare sustainability research at your <u>medical school</u>?	
3	Yes, there are faculty members at the medical school who have a primary research focus in planetary health or healthcare sustainability.
2	Yes, there are individual faculty members at the medical school who are conducting research related to planetary health or healthcare sustainability, but it is not their primary research focus.
1	There are planetary health and/or healthcare sustainability researchers at the institution , but none associated with the medical school.
0	No, there are no planetary health and/or healthcare sustainability researchers at the institution or medical school at this time.
<p><i>Score explanation: There are faculty members at the School of Medicine whose research involves the intersection of environmental health and human health (e.g., William Checkley, MD, Meredith McCormack, MD). However, their research is not primarily focused on planetary health. There also lacks a central body within the Johns Hopkins School of Medicine dedicated to planetary health. Therefore, students who are interested have to embark on an extensive search to find opportunities to get involved. There are researchers whose primary focus lies in planetary health at the Bloomberg School of Health and the Whiting School of Engineering, but there is no official body that facilitates interdisciplinary collaboration between these institutions and the School of Medicine.</i></p>	

2.2. Is there a dedicated department or institute for interdisciplinary planetary health research at your <u>institution</u>?	
3	There is at least one dedicated department or institute for interdisciplinary planetary health research.
2	There is not currently a department or institute for interdisciplinary planetary health research, but there are plans to open one in the next 3 years.
1	There is an Occupational and Environmental Health department , but no interdisciplinary department or institute for planetary health research.
0	There is no dedicated department or institute.

Score explanation: The Johns Hopkins School of Medicine boasts the Division of Occupational and Environmental Medicine, but the overall focus of this body is to improve the health and productivity of employees at Johns Hopkins, rather than researching and improving planetary health. Apart from the School of Medicine, there is an array of initiatives in the broader Johns Hopkins institution that focus on planetary health. These bodies include the [Center for a Liveable Future](#), [Center for Social Concern](#), and [Center for Health Security](#). A more exhaustive list can be found [here](#). Within the Whiting school of Engineering and Bloomberg School of Public Health, there are departments dedicated to environmental conditions relating to health equity.

2.3. Is there a process by which communities disproportionately impacted by climate change and environmental injustice give input or make decisions about the research agenda at your medical school?

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

Score explanation: There are no initiatives to intentionally include communities who are disproportionately impacted by climate change in the greater research and decision-making at Johns Hopkins School of Medicine. There are School of Medicine-related initiatives, such as SOURCE, that focus on providing disadvantaged groups and individuals with a variety of necessities and services, and these include initiatives specifically related to [environmental and planetary health](#). However, these are community service organizations and do not function to involve those they assist in any decision-making process at Johns Hopkins School of Medicine. These could potentially be considered avenues where input from disadvantaged communities can be received, but there is no official input-giving process that exists in these organizations.

[CHARMED](#), or the Community Health Addressing Regional Maryland Environmental Determinants of Disease, is an organization that aims to understand the mechanistic links between environmental exposures and adverse health outcomes to improve the health and well-being of vulnerable individuals in communities across the greater Maryland region. This organization explicitly involves vulnerable communities in their decision-making; however, they are not officially affiliated with the School of Medicine.

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

3	There is an easy-to-use, adequately comprehensive website that centralizes various campus resources related to health and the environment including all of the following: upcoming events, leaders in planetary health at your institution, and relevant funding opportunities.
2	There is a website that attempts to centralize various campus resources related to health and the environment, but it is hard-to-use, not updated, or not adequately comprehensive.

1	The institution has an Office of Sustainability website that includes some resources related to health and the environment.
0	There is no website.
<p><i>Score explanation: The greater Johns Hopkins institution boasts a centralized website where students can easily learn about and engage with environmental health and sustainability initiatives. Here, there is an avenue to discover centers and institutes, get involved in research, and learn about upcoming planetary health-related events.</i></p>	

2.5. Has your institution recently hosted a conference or symposium on topics related to planetary health?	
4	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.
<p><i>Score explanation: Johns Hopkins University hosts annual sustainability leadership symposiums. These are not directly affiliated with the School of Medicine.</i></p>	

2.6. Is your medical school a member of a national or international planetary health or ESH organization?	
1	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
<p><i>Score explanation: Johns Hopkins SOM is a member of the Global Consortium on Climate and Health Education.</i></p>	

Section Total (12 out of 17)	71%
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Back to Summary Page [here](#)

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

Community Outreach and Advocacy

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

3.1. Does your medical school partner with community organizations to promote planetary and environmental health?	
3	Yes, the medical school meaningfully partners with multiple community organizations to promote planetary and environmental health.
2	Yes, the medical school meaningfully partners with one community organization to promote planetary and environmental health.
1	The institution partners with community organizations, but the medical school is not part of that partnership.
0	No, there is no such meaningful community partnership.
<p><i>Score explanation: The Johns Hopkins University School of Medicine partners with SOURCE, a Johns Hopkins community engagement and service learning center for East Baltimore campuses. SOURCE partners with organizations, including environmentally focused organizations, in Baltimore to provide service learning opportunities for students, faculty, and staff. SOURCE connects School of Medicine students to organizations through in-person information and recruiting fairs, application-based programs, and a weekly newsletter.</i></p>	

3.2. Does your medical school offer community-facing courses or events regarding planetary health?	
3	The medical school offers community-facing courses or events at least once every year.
2	The medical school offers courses or events open to the community at least once per year, but they are not primarily created for a community audience.
1	The institution has offered community-facing courses or events, but the medical school was not involved in planning those courses or events.
0	The institution/medical school have not offered such community-facing courses or events.
<p><i>Score explanation: The School of Public Health periodically hosts talks about planetary health that are open to the community. However, to our knowledge, the School of Medicine has not hosted similar community-facing planetary health events.</i></p>	

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

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

Score explanation: Weekly and daily Johns Hopkins newsletters, such as Inside Hopkins, Johns Hopkins University Communications, and SOURCE provide information on institutionally related news, research, and institutionally hosted events, some of which may be related to planetary health and sustainable healthcare.

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

2	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.
1	Yes, the institution or main affiliated hospital trust offers one course relating to planetary health and/or sustainable healthcare for post-graduate providers
0	There are no such accessible courses for post-graduate providers

Score explanation: To our knowledge, Johns Hopkins University and Johns Hopkins Hospital do not offer courses that ensure that skills in planetary health and sustainable healthcare remain up to date after graduation.

3.5. Does your medical school or its affiliated teaching hospitals have accessible educational materials for patients about environmental health exposures?

2	Yes, the medical school or all affiliated hospitals have accessible educational materials for patients.
1	Some affiliated hospitals have accessible educational materials for patients.
0	No affiliated medical centres have accessible educational materials for patients.

Score explanation: The Johns Hopkins Medicine website has a variety of accessible educational materials for patients about environmental health exposures, including webpages about asbestos, air quality, and asthma and tobacco smoke.

3.6. Does your medical school or its affiliated teaching hospitals have accessible educational materials for patients about the health impacts of climate change?

2	Yes, the medical school or 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: To our knowledge, Johns Hopkins Medicine does not provide accessible educational materials for patients about the health impacts of climate change.

Section Total (7 out of 14)

50%

Back to Summary Page [here](#)

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

Support for Student-Led Planetary Health Initiatives

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

4.1. Does your medical school or your institution 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: FastForwardU, Johns Hopkins Technology Ventures, and the Social Innovation Lab at Johns Hopkins provide funding for entrepreneurial projects; previously, sustainability projects have been accepted into these innovation ecosystems. In conjunction with FastForwardU, Johns Hopkins's startup accelerator, mounts an annual innovation challenge for student entrepreneur sustainability pitches with \$2000 in prizes.

4.2. Does your institution offer opportunities for medical students to do research related to planetary health and/or sustainable healthcare?	
2	The institution has a specific research program or fellowship for students interested in doing planetary health/sustainable healthcare research.
1	There are research opportunities for students to perform research related to planetary health/sustainable healthcare, but these require student initiative to seek these out and carry them out in their spare time.
0	There are no opportunities for students to engage in planetary health/sustainable healthcare research.

Score explanation: Johns Hopkins has a number of researchers actively investigating matters of planetary health. Medical students can conduct research with faculty affiliated with the Center for a Livable Future, the Program on Global Sustainability and Health (Bloomberg School of Public Health/Whiting School of Engineering), the Water Institute (Bloomberg School of Public Health) and more. Johns Hopkins is currently recruiting professors for the Climate, Resilience, and Health research cluster, which will be a collaboration between the School of Medicine and several other schools.

However, Johns Hopkins does not offer a funded program geared specifically towards medical student research on planetary health.

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

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

Score explanation: Johns Hopkins does not have an institutionally run medical school-specific webpage geared specifically towards planetary health.

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

2	Yes, there is a 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 .
0	No, there is not a student organization at my institution dedicated to planetary health or sustainability in healthcare.

Score explanation: The Planetary Health Alliance at JHUSOM is a student organization aimed at expanding advocacy, education, and research on environmental health and sustainability. This organization receives institutional funding and has a faculty mentor. The Planetary Health Alliance conducts an elective TIME course available to first-year students.

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

1	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: Johns Hopkins has a university-wide Sustainability Leadership Council affiliated with the Office of Sustainability. Students can serve on the Research & Academics Committee, Operations Committee, or Environmental Justice Committee. Undergraduate students can join the Student Government Association's Health, Safety, and Sustainability Committee to promote sustainability efforts on campus.

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

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

Score explanation: The Hopkins Environmental Resourcefulness and Botanical Society (HERBS) maintains an urban garden at the School of Medicine. The Bloomberg School of Public Health and School of Advanced International Studies regularly host talks on planetary health that students are welcome to attend. Students also can partner with SOURCE and the Baltimore community to learn about, volunteer, and advocate for issues related to environmental justice and climate change; one example is the Energy Justice Network. The Office of Experiential Education also promotes outdoor day trips in the Mid-Atlantic region, kayak clinics, and outdoor equipment rentals.

Section Total (11 out of 15)

73%

Back to Summary Page [here](#)

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

Engineers Without Borders is a Johns Hopkins club with a faculty advisor that devises engineering solutions to improve quality of life for local and international communities.

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.*

5.1. Does your <u>medical school</u> and/or <u>institution</u> 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
<p><i>Score explanation: Johns Hopkins Hospital has an Office of Sustainability and a volunteer-based Green Team. The Green Team is a group of hospital employees who collaborate on projects such as certifying Green Offices at the hospital. The undergraduate Johns Hopkins University campus has an independent, well-established Office of Sustainability; however, there is no specific staff member in charge of the medical school.</i></p>	

5.2. How ambitious is your <u>institution/medical school</u> 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
<p><i>Score explanation: Neither Johns Hopkins Hospital nor Johns Hopkins University School of Medicine currently have an explicit goal of carbon neutrality. However, the Johns Hopkins University undergraduate campus is set to release a new climate change and sustainability plan in Spring 2024. Currently, the draft of this plan lists carbon neutrality by 2040 as a goal. The</i></p>	

complete draft can be viewed [here](#). Additionally, Johns Hopkins University joined the Climate Registry, and its carbon footprint is reported publicly [here](#).

5.3. 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.
<p><i>Score explanation: According to John Hopkins Health System's Sustainability Project Manager, 0% of the energy utilized in the Armstrong Medical Education Building is renewable.</i></p>	

5.4. 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?	
3	Yes, sustainable building practices are utilized for new buildings on the medical school campus and the majority of old buildings have been retrofitted to be more sustainable.
2	Sustainable building practices are utilized for new buildings on the medical school campus, but most old buildings have not been retrofitted .
1	Sustainable building practices are inadequately or incompletely implemented for new buildings.
0	Sustainability is not considered in the construction of new buildings.
<p><i>Score explanation: The Johns Hopkins University School of Medicine is mainly located in the Armstrong Medical Education Building (AMEB). AMEB is not LEED certified. Many other buildings utilized by medical school students are LEED certified including the Miller and Ross Research Buildings. The majority of recently constructed buildings are at least LEED Silver certified. The full list of certifications can be found here.</i></p>	

5.5. Has the <u>medical school</u> or <u>institution</u> implemented strategies to encourage and provide environmentally-friendly transportation options for students and reduce the environmental impact of commuting?	
2	Yes, the medical school or institution has implemented strategies to encourage and provide environmentally-friendly transportation options such as safe active transport, public transport, or carpooling and these options are well-utilized by students. Alternatively, the campus location is not amenable to unsustainable forms of transportation by default.

1	The medical school or institution has implemented some strategies to provide environmentally-friendly transportation options, but the options are unsatisfactorily accessible or advertised.
0	The medical school or institution has not implemented strategies to encourage and provide environmentally-friendly transportation options.
<p><i>Score explanation: Johns Hopkins University runs free bus and shuttle routes for employees and students. However, these buses do not serve every neighborhood that students live in, and the school does not provide free passes for Baltimore public transit. Additionally, students are placed at clinical sites that are not accessible by public transit as early as their first year. Johns Hopkins University has incentive programs for employees to utilize environmentally-friendly transportation options which can be viewed here, but the incentives are not available to students.</i></p>	

5.6. Does your <u>medical school</u> have an organics recycling program (compost) and a conventional recycling program (aluminum/paper/plastic/glass)?	
2	Yes, the medical school has both compost and recycling programs accessible to students and faculty.
1	The medical school has either recycling or compost programs accessible to students and faculty, but not both.
0	There is no compost or recycling program at the medical school.
<p><i>Score explanation: The medical school provides both compost and recycling bins throughout AMEB, the main building utilized by medical students. The 3-in-1 waste bins are located in the main hallways, near classroom entrances, and in the student lounges.</i></p>	

5.7. 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)?	
3	Yes, the medical school has adequate sustainability requirements for food and beverages, including meat-free days or no red-meat, and is engaged in efforts to increase food and beverage sustainability.
2	There are sustainability guidelines for food and beverages, but they are insufficient or optional . The medical school is engaged in efforts to increase food and beverage sustainability.
1	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.
<p><i>Score explanation: To our knowledge, the medical school does not have sustainability guidelines for campus food and beverage selections.</i></p>	

5.8. Does the <u>medical school</u> or <u>institution</u> apply sustainability criteria when making decisions
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about supply procurement?	
3	Yes, the medical school has adequate sustainability requirements for supply procurement and is engaged in efforts to increase sustainability of procurement.
2	There are sustainability guidelines for supply procurement, but they are insufficient or optional . The medical school is engaged in efforts to increase sustainability of procurement.
1	There are sustainability guidelines for supply procurement, but they are insufficient or optional . The medical school is not engaged in efforts to increase sustainability of procurement.
0	There are no sustainability guidelines for supply procurement.

Score explanation: According to facilities staff for the Johns Hopkins Health System, there are optional best practices and guidelines. The Johns Hopkins University Sustainability Leadership Council has an Operations Committee with a Zero Waste Planning working group that identifies waste reduction opportunities and collaborates with campus programs to reduce waste.

5.9. Are there sustainability requirements or guidelines for events hosted at the <u>medical school</u> ?	
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: To our knowledge, there are no sustainability guidelines for medical school events.

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

Score explanation: The Johns Hopkins University Office of Sustainability and Sustainability Leadership Council run a Green Labs Initiative that reduces water use and emissions by engaging faculty, students, and staff.

5.11. Does your <u>institution's</u> endowment portfolio investments include fossil-fuel companies?	
4	The institution is entirely divested from fossil fuels and has made a commitment to reinvest divested funds into renewable energy companies or renewable energy campus initiatives.

3	The institution is entirely divested from fossil fuels.
2	The institution has partially divested from fossil fuel companies or has made a commitment to fully divest , but currently still has fossil fuel investments.
1	The institution has not divested from fossil-fuel companies, but faculty and/or students are conducting organized advocacy for divestment.
0	Yes, the institution has investments with fossil-fuel companies and there have been no efforts to change that.
<p><i>Score explanation: In December 2017, the Johns Hopkins University Board of Trustees voted to divest from coal companies. The university has not fully divested from fossil fuel companies. As of 2021, the Johns Hopkins student group Refuel Our Future estimates that over \$400 million of Johns Hopkins's then-endowment \$4.3 billion endowment is invested in fossil fuel companies.</i></p>	

Section Total (13 out of 32)	41%
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Back to Summary Page [here](#)

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

Grading

Section Overview

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

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

Planetary Health Grades for the Johns Hopkins University School of Medicine

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

Section	Raw Score %	Letter Grade
Planetary Health Curriculum (30%)	$(24/72) \times 100 = 33\%$	D
Interdisciplinary Research (17.5%)	$(12/17) \times 100 = 71\%$	B
Community Outreach and Advocacy (17.5%)	$(7/14) \times 100 = 50\%$	C
Support for Student-led Planetary Health Initiatives (17.5%)	$(11/15) \times 100 = 73\%$	B
Campus Sustainability (17.5%)	$(13/32) \times 100 = 41\%$	C-
Institutional Grade	$(33 \times 0.3 + 71 \times 0.175 + 50 \times 0.175 + 73 \times 0.175 + 41 \times 0.175) = 50\%$	C