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

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JOHNS HOPKINS  
SCHOOL of MEDICINE

2022-2023 Contributing Team:

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## Summary of Findings

<b>Overall</b>	<b>C</b>
<b><u>Curriculum</u></b>	<b>D+</b>
<ul style="list-style-type: none"> <li>The Johns Hopkins University School of Medicine (JHSOM) M.D. curriculum currently lacks integration of planetary health and climate change material into its core curriculum. However, there are relevant learning objectives during short elective courses such as the Disaster Medicine 3-day elective. There is also a selective course within the Foundations of Public Health course led by students that primarily focuses on planetary health. Currently, the EM department is working on incorporating planetary health into pre-clinical and clerkship activities.</li> <li><b>Recommendations:</b> Course directors for various course blocks could integrate case studies featuring environmental hazards into their lectures or small group sessions. There is also a lack of emphasis on introducing planetary health into conversations with patients, such as taking an environmental health exposure history. This could be introduced in clinical skills courses, such as Clinical Foundations of Medicine or the Longitudinal Ambulatory Clerkship.</li> </ul>	
<b><u>Interdisciplinary Research</u></b>	<b>B+</b>
<ul style="list-style-type: none"> <li>JHSOM does not have departments dedicated to research in planetary health, but the institution as a whole does. However, there are individual faculty who do research related to this field that students can find via a directory search.</li> <li><b>Recommendations:</b> The Johns Hopkins School of Medicine could partner directly with the already established centres within the entire institution to work on research and initiatives that focus on planetary health. JHSOM can also establish a central database to find research dedicated to relevant research topics.</li> </ul>	
<b><u>Community Outreach and Advocacy</u></b>	<b>C</b>
<ul style="list-style-type: none"> <li>JHSOM has multiple community partners with an environmental health focus and a moderate degree of student engagement with these partners. The medical school does not host planetary health-related events or courses for the community. No planetary health-related CME courses are hosted for healthcare providers. JHSOM has several accessible educational materials online for patients.</li> <li><b>Recommendations:</b> There is a need for more community-facing events and CME courses relating to planetary health, especially given the prevalence of environmental justice issues in the surrounding city.</li> </ul>	
<b><u>Support for Student-Led Initiatives</u></b>	<b>B</b>
<ul style="list-style-type: none"> <li>JHSOM provide some financial support and mentorship to students interested in planetary health. The Planetary Health Alliance, a student organisation dedicated to this topic, receives funding from the Medical Student Senate and has a faculty mentor. In addition, the University offers several opportunities for students to participate in co-curricular planetary health programs through SOURCE, the School of Public Health, and TIME courses.</li> <li><b>Recommendations:</b> Co-curricular opportunities mostly come from the wider university rather than the Medical School. We recommend that the medical school offer increased support to students interested in sustainable initiatives. For example, the school could create a website that advertises mentors or opportunities for students relating to planetary health or education for sustainable healthcare and prioritises grants for related research.</li> </ul>	
<b><u>Campus Sustainability</u></b>	<b>C</b>
<ul style="list-style-type: none"> <li>JHSOM does not have readily available information regarding its own sustainability and has not taken many steps to improve its carbon footprint. However, the JHSOM has recently hired a sustainability project manager. Some of the steps the school has taken include composting and recycling programs, initiatives to make lab spaces more environmentally sustainable, and partial divestment from fossil fuels.</li> <li><b>Recommendations:</b> The JHSOM sustainability project manager should improve campus sustainability and make this information publicly available. The 2030 JHU Sustainability Plan should explicitly state a goal to reduce the institution's carbon footprint as well as the medical school's, and take actions to work towards that goal.</li> </ul>	

# Statement of Purpose

*Planetary health is human health.*

The Planetary Health Alliance describes planetary health as “a solutions-oriented, transdisciplinary field and social movement focused on analysing and addressing the impacts of human disruptions to Earth’s natural systems on human health and all life on Earth.” This definition is intentionally broad, intended to encompass the multitude of ways that the environment can affect health, including water scarcity, changing food systems, urbanisation, biodiversity shifts, natural disasters, climate change, changing land use and land cover, global pollution, and changing biogeochemical flows. The health of humanity is dependent on our environment, and our environment is changing rapidly and in disastrous ways. Although the World Health Organization has called climate change “the greatest threat to global health in the 21st century,” many medical school’s institutional priorities do not reflect the urgency of this danger to human health.

As future health professionals, we must be prepared to address the impacts of human-caused environmental changes on our patients’ health. This preparation is in the hands of the institutions providing our medical training. It is imperative that we hold our institutions accountable for educating medical students about the health impacts of climate change and other anthropogenic environmental changes, generating research to better understand health impacts and solutions, supporting related student initiatives, embracing sustainable practices as much as possible, and engaging with surrounding communities that are most affected by environmental threats. Because climate change and environmental threats disproportionately affect vulnerable populations (for example, communities of 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 civilization 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 elicit 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. Did your <b>medical school</b> 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 <b>more than one</b> elective whose primary focus is ESH/planetary health in the past year.
2	Yes, the medical school has offered <b>one</b> elective whose primary focus is ESH/planetary health in the past year.
1	The medical school does <b>not</b> have any electives whose primary focus is ESH/planetary health, but there are one or more electives that include a <b>lecture</b> on planetary health.
0	No, the medical school has <b>not</b> 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 Curriculum 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 three-week period, with three sessions lasting 1-1.5 hours per week. The topics covered by the selective may vary each year. The most recent iteration of this course in fall 2022 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.</i></p>	

## Curriculum: Health Effects of Climate Change

2. Does your <b>medical school</b> curriculum address the relationship between extreme heat, health risks, and climate change?	
3	This topic was explored <b>in depth</b> by the <b>core</b> curriculum.
2	This topic was <b>briefly</b> covered in the <b>core</b> curriculum.
1	This topic was covered in <b>elective</b> coursework.
0	This topic was <b>not</b> 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 is also briefly covered in the Planetary Health Selective course (3 week course, ~1-1.5 hours a week) that is offered as an elective in the first year</i></p>	

public health course. This elective is taught by second-year medical students that lead the Planetary Health Alliance student organisation. The Topics in Interdisciplinary Medicine (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. It includes planetary health in one of the learning objectives. Also, the Global Health 3 day course has a session called “Global Health and the Environment” where this topic is discussed. The Emergency Medicine (EM) clerkship director (Dr. Bord) is working on a national level committee to incorporate a climate health curriculum into the national curriculum via the Clerkship Directors in EM and SAEM which will then inform enhancements to the EMed curriculum at JHU SOM. Furthermore, the EM department recently hired a faculty member with expertise and interest in planetary health who is on the University committee studying and making recommendations on the teaching of planetary health and system initiatives across JHU. He is also collaborating with the student interest group.

**3. Does your medical school curriculum address the impacts of extreme weather events on individual health and/or on healthcare systems?**

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

*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 is also briefly covered in the Planetary Health Selective course (3 week course, ~1-1.5 hours a week) that is offered 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.*

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

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

*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 infectious diseases. This topic is briefly covered in the Planetary Health Selective course (3 week course, ~1-1.5 hours a week) that is offered 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.*

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

3	This topic was explored <b>in depth</b> by the <b>core</b> curriculum.
2	This topic was <b>briefly</b> covered in the <b>core</b> curriculum.
1	This topic was covered in <b>elective</b> coursework.
0	This topic was <b>not</b> 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 is also briefly covered in the Planetary Health Selective course (3 week course, ~1-1.5 hours a week) that is offered 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.*

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

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

*Score explanation: This topic is briefly covered in the Planetary Health Selective course (3 week course, ~1-1.5 hours a week) that is offered 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.*

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

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

*Score explanation: This topic is briefly covered in the Planetary Health Selective course (3 week course, ~1-1.5 hours a week) that is offered 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 also briefly mentions the mental health effects of natural disasters.*



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

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

*Score explanation: This topic is covered in the Planetary Health Selective course (3 week course, ~1-1.5 hours a week) that is offered 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.*

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

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

*Score explanation: This topic is covered in the Planetary Health Selective course (3 week course, ~1-1.5 hours a week) that is offered 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) 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.*

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

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

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 <b>depth</b> by the <b>core</b> curriculum.
2	This topic was <b>briefly</b> covered in the <b>core</b> curriculum.
1	This topic was covered in <b>elective</b> coursework.
0	This topic was <b>not</b> covered.
<i>Score explanation: To our knowledge, this topic is not covered in the curriculum or elsewhere.</i>	

12. Does your <u>medical school</u> curriculum address important human-caused environmental threats that are relevant to the university's surrounding community?	
3	This topic was explored in <b>depth</b> by the <b>core</b> curriculum.
2	This topic was <b>briefly</b> covered in the <b>core</b> curriculum.
1	This topic was covered in <b>elective</b> coursework.
0	This topic was <b>not</b> covered.
<i>Score explanation: Environmental justice issues and current environmental threats relevant to the Hopkins surrounding community (Baltimore) are briefly covered in the TIME: Health Disparities course (3 day course, 8am - 5pm) that all first years are required to take at the beginning of the year. These topics are also covered in the Planetary Health Selective course (3 week course, ~1-1.5 hours a week) that is offered 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.</i>	

13. To what extent does your <u>medical school</u> emphasise the importance of Indigenous knowledge and value systems as essential components of planetary health solutions?	
3	Indigenous knowledge and value systems are <b>integrated throughout</b> the medical school's planetary health education
2	Indigenous knowledge and value systems as essential components of planetary health solutions are included <b>briefly</b> in the core curriculum.
1	Indigenous knowledge and value systems as essential components of planetary health solutions are included in <b>elective</b> coursework.
0	This topic was <b>not</b> covered.
<i>Score explanation: To our knowledge, this topic is not covered in the curriculum or elsewhere.</i>	

14. Does your <u>medical school</u> curriculum address the outsized impact of anthropogenic environmental toxins on marginalised populations such as those with low SES, women, communities of color, children, homeless populations, Indigenous populations, and older adults?	
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3	This topic was explored <b>in depth</b> by the <b>core</b> curriculum.
2	This topic was <b>briefly</b> covered in the <b>core</b> curriculum.
1	This topic was covered in <b>elective</b> coursework.
0	This topic was <b>not</b> covered.
<p><i>Score explanation: This topic is briefly covered in the TIME: Health Disparities course (3 day course, 8am - 5pm) that all first years are required to take at the beginning of the year. These topics are also covered in the Planetary Health Selective course (3 week course, ~1-1.5 hours a week) that is offered 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 also briefly touches on this topic and is taught by global health and public health faculty.</i></p>	

**Curriculum: Sustainability**

<b>15. Does your <u>medical school</u> curriculum address the environmental and health co-benefits of a plant-based diet?</b>	
3	This topic was explored <b>in depth</b> by the <b>core</b> curriculum.
2	This topic was <b>briefly</b> covered in the <b>core</b> curriculum.
1	This topic was covered in <b>elective</b> coursework.
0	This topic was <b>not</b> covered.
<p><i>Score explanation: To our knowledge, this topic is not covered in the curriculum or elsewhere.</i></p>	

<b>16. Does your <u>medical school</u> curriculum address the carbon footprint of healthcare systems?</b>	
3	This topic was explored <b>in depth</b> by the <b>core</b> curriculum.
2	This topic was <b>briefly</b> covered in the <b>core</b> curriculum.
1	This topic was covered in <b>elective</b> coursework.
0	This topic was <b>not</b> covered.
<p><i>Score explanation: To our knowledge, this topic is not covered in the curriculum or elsewhere.</i></p>	

<b>17. Does your <u>medical school</u> curriculum cover these components of sustainable clinical practice in the <u>core</u> curriculum? (points for each)</b>	
2	The health <b>and</b> environmental <b>co-benefits</b> of <b>avoiding</b> over-medicalisation, over-investigation and/or over-treatment

2	The environmental impact of <b>pharmaceuticals</b> and over-prescribing as a cause of climate health harm. Alternatively teaching on <b>deprescribing</b> where possible and its environmental and health co-benefits would fulfil this metric.
1	The health <b>and</b> environmental <b>co-benefits</b> of <b>non-pharmaceutical management</b> 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 <b>surgical</b> healthcare on planetary health and the climate crisis, and how can it be mitigated
1	The impact of <b>anaesthetic</b> 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 <b>inhalers</b> on the healthcare carbon footprint and the environmental benefit of dry powdered inhalers over metered dose inhalers.
1	<b>Waste production</b> within healthcare <b>clinics</b> and strategies for reducing waste in clinical activities (e.g. single use items in the inpatient or outpatient setting)
	<i>Score explanation: The benefits of avoiding over medicalisation, over-investigation, and over-treatment is covered in the High Value Care Course (3 week course, ~1-1.5 hours a week) that is offered as an elective in the first year public health course. This elective is taught by second-year medical students who are leaders of the high value care student organisation.</i>

### *Curriculum: Clinical Applications*

<b>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?</b>	
2	Yes, there are strategies introduced for having conversations with patients about climate change in the <b>core</b> curriculum.
1	Yes, there are strategies introduced for having conversations with patients about climate change in <b>elective</b> coursework.
0	No, there are <b>not</b> strategies introduced for having conversations with patients about climate change
<i>Score explanation: To our knowledge, this topic is not covered in the curriculum or elsewhere.</i>	

<b>19. In training for patient encounters, does your <u>medical school's</u> curriculum introduce strategies for taking an environmental history or exposure history?</b>	
2	Yes, the <b>core</b> curriculum includes strategies for taking an environmental history.
1	Only <b>elective</b> coursework includes strategies for taking an environmental history.
0	No, the curriculum does <b>not</b> include strategies for taking an environmental history.
<i>Score explanation: To our knowledge, this topic is not covered in the curriculum or elsewhere.</i>	

*Curriculum: Administrative Support for Planetary Health*

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 <b>major</b> improvements to ESH/planetary health education.
2	Yes, the medical school is currently in the process of making <b>minor</b> improvements to ESH/planetary health education.
0	No, there are <b>no</b> improvements to planetary health education in progress.
<p><i>Score explanation: Student leaders have met with the curriculum deans and other supportive faculty to discuss changes to the curriculum. There is faculty interest in these changes, but little progress has been made thus far.</i></p>	

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 <b>well integrated</b> into the core medical school curriculum.
4	<b>Some</b> 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 <b>(a) standalone lecture(s)</b> .
0	There is <b>minimal/no</b> education for sustainable healthcare.
<p><i>Score explanation: There are a few standalone lectures in the core curriculum that briefly touch on planetary health concepts, mostly in the realm of effects of exposure to environmental toxins. For example, there are lectures in the genetics course on the effect of pollutants on DNA methylation, in the pulmonology course on effects of environmental exposures on the lungs, and in the pharmacology course on metabolic processing of chemicals.</i></p>	

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	<b>Yes</b> , the <b>medical school</b> has a specific faculty/staff member responsible for overseeing curricular integration of planetary health and sustainable healthcare
0	<b>No</b> , the <b>medical school</b> does <b>not</b> have a specific faculty/staff member responsible for overseeing curricular integration of planetary health and sustainable healthcare.
<p><i>Score explanation: To our knowledge, there are faculty champions of environmental health being incorporated into the curriculum (e.g., Dr. Peter Winch, Dr. Christopher Lemon, Dr. Panagis Galiatsatos, and Dr. Melissa Pavelack) but no faculty member specifically responsible or appointed by the medical school.</i></p>	

Section Total (25 out of 72)	34.72%
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*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.*

None.

# 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 emphasised.*

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 <b>medical school</b> who have a <b>primary</b> research focus in planetary health <b>or</b> healthcare sustainability.
2	Yes, there are individual faculty members at the <b>medical school</b> who are conducting research <b>related</b> 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 <b>institution</b> , but none associated with the medical school.
0	No, there are <b>no</b> planetary health and/or healthcare sustainability researchers at the <b>institution</b> or <b>medical school</b> at this time.

*Score explanation: There are individual faculty members associated with the school of medicine whose research includes planetary health interactions with human health (e.g., Panagis Galiatsatos and Meredith McCormack). However, these faculty members are not part of a specific planetary health center, but rather do their own individual research related to the field. In order for students and others to find these opportunities, they must do an intensive search through faculty members to see whose research biography includes these planetary health topics or read through available research projects. However, based on a search through the JHUSOM research [directory](#), there are no labs with planetary health as a primary focus. Outside the School of Medicine, in the School of Public Health, there are researchers within an environmental health department dedicated to taking multi-disciplinary approaches to tackling environmental related health issues.*

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

*Score explanation: Within the JHUSOM, there is only a Health, Safety, and Environment department that houses the Occupational Safety and Environmental Safety departments. These departments are in place only to regulate the safety of the workplace at the hospital.*

*Within the other institutions at JHU that are not the School of Medicine, there are centers such as the [Center for a Liveable Future](#), which is working toward a healthy, equitable, resilient food system from within the Department of Environmental Health and Engineering. There is also the [Alliance for a Healthier World](#), whose mission is to integrate diverse expertise and perspectives from across Johns Hopkins University to create groundbreaking research and policy solutions in support of global health equity. Additionally, there is a [cluster](#) of researchers dedicated to studying climate, resiliency, and health. Within the Whiting school of Engineering and Bloomberg School of Public Health, there are departments dedicated to environmental conditions relating to health equity.*

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

*Score explanation: To our knowledge, there are no programs where community members impacted by climate change are able to provide input towards the school's research agenda, nor are there current efforts to change this. There is an institution-wide Sustainability Leadership Council (SLC) that is involved in sustainability related decisions within the schools, but members of the council are faculty and students, with no community member representation outside of the institution. There is also a center called SOURCE, which is the community engagement and service-learning center for the Johns Hopkins University (JHU) Schools of Public Health, Nursing, and Medicine. This center is in constant communication with vulnerable members of the community, but is more focused on community service rather than research initiatives.*

**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 <b>easy-to-use, adequately comprehensive</b> website that <b>centralises</b> 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 <b>attempts to centralise</b> various campus resources related to health and the environment, but it is hard-to-use, not updated, or not adequately comprehensive.
1	The <b>institution</b> has an <b>Office of Sustainability website</b> that includes <b>some</b> resources related to health and the environment.
0	There is <b>no</b> website.



*Score explanation: There is an Office of Sustainability [website](#) that has recently been refurbished to serve as a central hub amongst all the JHU institutions and schools. Here, one can find all relevant information relating to sustainability, including planetary health, including but not limited to: research, interdisciplinary institutes, leading faculty, and how to get involved (whether through volunteering or education).*

**5. Has your institution recently hosted a conference or symposium on topics related to planetary health?**

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

*Score explanation: On March 30th of 2022, the Johns Hopkins School of Medicine co-hosted a university-wide climate justice teach-in, in collaboration with the School of Public Health and the undergraduate schools. This event consisted of 5 different sessions (environmental health & justice, sustainable community planning and transitions panel, climate & environmental justice in Baltimore, climate activism and politics, food system & climate justice) that focused on intersectional and interdisciplinary discussions with various faculty and community members.*

**6. Is your medical school a member of a national or international planetary health or ESH organisation?**

1	Yes, the medical school is a member of a national or international planetary health or ESH organisation
0	No, the medical school is <b>not</b> a member of such an organisation

*Score explanation: Johns Hopkins SOM is a member of the Global Consortium on Climate and Health Education.*

**Section Total (13 out of 17)**

**76.47%**

*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.*

All research resources offered at Johns Hopkins School of Medicine and the greater Johns Hopkins institution have been addressed.

# 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 <b>medical school</b> partner with community organisations to promote planetary and environmental health?	
3	Yes, the <b>medical school</b> meaningfully partners with <b>multiple</b> community organisations to promote planetary and environmental health.
2	Yes, the <b>medical school</b> meaningfully partners with <b>one</b> community organisation to promote planetary and environmental health.
1	The <b>institution</b> partners with community organisations, but the medical school is not part of that partnership.
0	No, there is <b>no</b> such meaningful community partnership.

Score explanation: [SOURCE](#) is the community engagement and service-learning center for the Johns Hopkins University (JHU) Schools of Public Health, Nursing, and Medicine. SOURCE currently has seven community partners with an environmental focus listed on their website. Students can reach out to these organisations directly through the contact information on the SOURCE website or can reach out to SOURCE to make these connections. According to SOURCE's [ENGAGE platform](#), five of these seven organisations have received volunteers from JHU affiliates and 375 person-hours of impact. These service hours represent a modest to intermediate partnership of JHU with environmentally-focused organisations.

2. Does your <b>medical school</b> offer community-facing courses or events regarding planetary health?	
3	The <b>medical school</b> offers community-facing courses or events at least once every year.
2	The <b>medical school</b> 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 <b>institution</b> has offered community-facing courses or events, but the <b>medical school</b> was not involved in planning those courses or events.
0	The <b>institution/medical school</b> have not offered such community-facing courses or events.

Score explanation: The Bloomberg School of Public Health sometimes hosts planetary health and sustainability-centered events. In January 2023, Samuel Myers, the founder of Planetary Health Alliance, gave a talk at Hopkins. While this talk was open to everyone, the organisers did not widely advertise it to the community. In 2020, SOURCE's yearly Baltimore Week included an environmental

*justice panel and a sustainability circle. Both JHU affiliates and community members attended these events.*

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

*Score explanation: The email newsletters InsideHopkins, Johns Hopkins University Communications, and SOURCE provide updates on sustainability-related events and research as they come up.*

**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 <b>institution</b> or <b>main affiliated hospital trust</b> 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 <b>institution</b> or <b>main affiliated hospital trust</b> offers one course relating to planetary health and/or sustainable healthcare for post-graduate providers
0	There are <b>no</b> such accessible courses for post-graduate providers

*Score explanation: According to the Johns Hopkins Medicine CME website, there have been no relevant courses, neither live nor online, since 2016.*

**5. Does your medical school or its primary affiliated hospital have accessible educational materials for patients about environmental health exposures?**

2	Yes, <b>all</b> affiliated hospitals have accessible educational materials for patients.
1	<b>Some</b> affiliated hospitals have accessible educational materials for patients.
0	<b>No</b> affiliated medical centers have accessible educational materials for patients.

*Score explanation: Johns Hopkins Medicine has many informative [web pages](#) with educational materials on [environmental health exposures](#). These are within the top results of relevant Google searches, making them very accessible to both patients and the general public seeking this information. Further, providers within the hospital have easy access to environmental health exposure-related handouts for patients through the hospital electronic medical record system.*

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

materials for patients about climate change and health impacts?	
2	Yes, <b>all</b> affiliated hospitals have accessible educational materials for patients.
1	<b>Some</b> affiliated hospitals have accessible educational materials for patients.
0	<b>No</b> affiliated hospitals have accessible educational materials for patients.
<i>Score explanation: There are no relevant search results within Hopkins Medicine for these topics.</i>	

<b>Section Total (7 out of 14)</b>	<b>50%</b>
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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.*

No. The relevant resources have been highlighted above.

# Support for Student-Led Planetary Health Initiatives

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

1. Does your <b>medical school</b> or your <b>institution</b> offer support for medical students interested in enacting a sustainability initiative/QI project?	
2	Yes, the <b>medical school</b> or <b>institution</b> <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 <b>medical school</b> or <b>institution</b> encourages sustainability QI projects (to fulfil clerkship or longitudinal requirements) and offers resources to help students succeed in these projects, <b>but</b> there is no student funding available and there is no requirement to participate.
0	No, <b>neither</b> the medical school or the institution offer opportunities or support for sustainability initiatives or QI projects.
<p><i>Score explanation: For medical students within the institution, there are grants and financial resources available to enact an independent research project or initiative of their ideation. However, there are no concrete encouragements to find these projects, nor are they a part of the core curriculum, and students must seek out these projects or conceive of them independently. The money available is not specifically for planetary health projects, but for any scholarly endeavor a student chooses to pursue. Examples of these grants are <a href="#">here</a>, and include: Dean's Year of Research funding and Dean's Summer Research Funding.</i></p> <p><i>The institution offers other grants relating to sustainability initiatives; however, they are for researchers, departments, and PhD students, not medical students.</i></p>	

2. Does your <b>institution</b> offer opportunities for medical students to do research related to planetary health and/or sustainable healthcare?	
2	The <b>institution</b> has a <b>specific</b> 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 <b>require student initiative</b> to seek these out and carry them out in their spare time.
0	There are <b>no opportunities</b> for students to engage in planetary health/sustainable healthcare research.
<p><i>Score explanation: There are many opportunities for medical students to perform research related to planetary health topics through the Johns Hopkins Climate, Resilience, and Health research cluster; Environmental Health and Engineering department, Center for Livable Future, and Alliance for a Healthier World. These departments are not housed specifically in the School of Medicine. Additionally, students can seek out individual mentors. However, there is not a specific research or fellowship program available for medical students at this time.</i></p>	

**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 <b>medical school</b> 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 <b>medical school</b> 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 <b>no medical-school</b> specific webpage for locating planetary health and/or sustainable healthcare projects or mentors.

*Score explanation: Within the JHUSOM, there is no specific webpage related to planetary health or sustainable healthcare projects. There is an institution-wide [Office of Sustainability webpage](#) that contains a centralised set of ongoing research projects and relevant faculty members, but this is not medical school specific. There is no central JHUSOM website for research projects; there is a directory to find research members after a quick “keyword”-based search, but students would need to read through all faculty research descriptions.*

**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 organisation <b>with faculty support</b> at my medical school dedicated to planetary health or sustainability in healthcare.
1	Yes, there is a student organisation at my medical school dedicated to planetary health or sustainability in healthcare but it <b>lacks faculty support</b> .
0	No, there is <b>not</b> a student organisation at my institution dedicated to planetary health or sustainability in healthcare.

*Score explanation: The Planetary Health Alliance is a student organisation dedicated to planetary health and sustainability. The organisation has a faculty advisor, Dr. Eric Bass (a requirement of all student organisations). Notable faculty engaged in climate health work are Dr. Melissa Pavelack, Dr. Peter Winch, and Dr. Christopher Lemon, who are very supportive of the student group’s efforts. However, the student organisation is not, on average, well-known or advocated for by the faculty at large.*

**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: The institution-wide Office of Sustainability has a Sustainability Leadership Council (SLC) that includes student representatives. The SLC provides advice and recommendations to the Provost on policies, programs, and other initiatives that build a greater role for Johns Hopkins University in teaching, research, and leadership on sustainability, both locally and globally.*

**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 organise hiking, backpacking, kayaking, or other outings for students)

*Score explanation:*

*Through the service platform SOURCE, students can volunteer at Baltimore City Recreation and Parks, which undertakes tree plantings, gardens, and other beautification projects. Twenty unique members have logged 45 person-hours with this organisation so far. There is a community garden near the Homewood campus called Blue Jay's Perch, which is intended for community members and JHU affiliates to learn, teach, and practice safe and environmentally sustainable food production methods.*

*The Bloomberg School of Public Health hosts planetary health and sustainability-centered events. In January 2023, Samuel Myers, the founder of Planetary Health Alliance, gave a talk, and in April 2022, a Grand Rounds seminar was on planetary health.*

*During the TIME: Disparities and Inequities in Health and Health Care course for medical students, community organisations that worked on environmental and household exposures held interactive sessions. SOURCE hosts a yearly Baltimore Week, which is intended for attendance by JHU affiliates and community members. In 2020, this event included an environmental justice panel and a sustainability circle. The TIME: Planetary Health Selective course also featured a speaker in 2022 from the Strength to Love II community farm, who spoke about local environmental justice issues and climate challenges.*

*The undergraduate campus hosts an annual sustainable fashion show with a focus on planetary health.*

*SOURCE currently has seven community partners that work on community resilience to anthropogenic environmental impacts.*

*The Johns Hopkins Outdoors Club hosts frequent student wilderness outings for backpacking, hiking, biking, and canoeing. These are free to attend.*

Section Total (10 out of 15)	66.67%
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*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.*

No. The relevant resources have been highlighted above.



# 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 scrutinising every aspect of how our systems operate, from where we source our energy, to how we build our infrastructure, to what companies we invest in. Our medical schools, clinics, and hospitals must set the standard for sustainable practices, and show other sectors what is possible when it comes to minimising environmental impact.*

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 <b>at least one designated staff member</b> 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 <b>no specific staff member</b> in charge of medical school and/or hospital sustainability.
1	There are <b>no salaried sustainability staff</b> , but there is a sustainability task force or committee
0	There are <b>no</b> staff members <b>or</b> task force responsible for overseeing campus sustainability
<p><i>Score explanation: The Johns Hopkins University Office of Sustainability and Johns Hopkins Hospital Office of Sustainability are related but independent organisations seeking to promote sustainability. Employees of the Johns Hopkins Hospital Office of Sustainability focus solely on hospital operations. Additionally, the Green Team is a grassroots and cross-functional group of employees who meet regularly to build a "green" community within The Johns Hopkins Hospital where employees can learn, share, and create sustainable programs. However, the JHSOM has recently hired a sustainability project manager.</i></p>	

2. How ambitious is your <u>institution/medical school</u> plan to reduce its own carbon footprint?	
5	The institution/medical school has a <b>written and approved plan</b> to achieve carbon neutrality by <b>2030</b>
3	The institution/medical school has a <b>written and approved plan</b> to achieve carbon neutrality by <b>2040</b>
1	The institution/medical school has a stated goal of carbon neutrality by <b>2040</b> but has <b>not created a plan</b> to reach that goal or the <b>plan is inadequate</b>
0	The institution/medical school does <b>not</b> meet any of the requirements listed above
<p><i>Score explanation: Johns Hopkins as an institution has implemented a plan since 2007 to reduce carbon emissions by 51% to below 150k MTCO<sub>2e</sub>. It is on track to meet this goal by 2023.. Additionally, they have been in the process of developing a new Climate Action and Sustainability Plan looking to 2030 and beyond. The Carbon Roadmap working group debated a short-term carbon neutrality goal (which would require large purchases of carbon offsets) and</i></p>	

	<p><i>opted instead of a draft recommendation (still working on approvals) to achieve net zero scope 1 and scope 2 GHG emissions by 2045 in alignment with Baltimore, Maryland, and Washington D.C. with an emphasis on actual emissions reductions.</i></p>
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3. Do buildings/infrastructure used by the <u>medical school</u> for teaching (not including the hospital) utilise renewable energy?	
3	Yes medical school buildings are <b>100%</b> powered by renewable energy
2	Medical school buildings source <b>&gt;80%</b> of energy needs from off-site and/or on-site renewable energy.
1	Medical school buildings source <b>&gt;20%</b> of energy needs from off-site and/or on-site renewable energy.
0	Medical school buildings source <b>&lt;20%</b> of energy needs from off-site and/or on-site renewable energy.
<p><i>Score explanation: According to facilities staff for the Johns Hopkins Health System, our current ratio of renewable generated power versus traditional grid power is 19%.</i></p>	

4. Are sustainable building practices utilised for new and old buildings on the <u>medical school</u> campus, with design and construction of new buildings and remodelling of old buildings conforming to a published sustainability rating system or building code/guideline?	
3	Yes, sustainable building practices are utilised for new buildings on the medical school campus and the <b>majority</b> of old buildings <b>have been retrofitted</b> to be more sustainable.
2	Sustainable building practices are utilised for new buildings on the medical school campus, but most old buildings have <b>not been retrofitted</b> .
1	Sustainable building practices are <b>inadequately or incompletely</b> implemented for new buildings.
0	Sustainability is <b>not considered</b> in the construction of new buildings.
<p><i>Score explanation: The Johns Hopkins School of Medicine M.D program is located primarily in the Armstrong Medical Education Building (AMEB). Sustainable building practices are strongly considered for new construction; however, AMEB does not meet LEED certification. The majority of new construction and renovation projects at JHU are at least LEED Silver certification, with many buildings exceeding this threshold. Major renovations or new buildings are required at a minimum to meet the LEED Silver/Baltimore City Green Building Standards.</i></p>	

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?	
2	Yes, the medical school has implemented strategies to encourage and provide <b>environmentally-friendly transportation options</b> such as safe active transport, public transport, or carpooling and these options are well-utilised by students. Alternatively, the campus location is not amenable to unsustainable forms of transportation by default.

1	The medical school has implemented <b>some</b> strategies to provide environmentally-friendly transportation options, but the options are <b>unsatisfactorily</b> accessible or advertised.
0	The medical school has <b>not</b> implemented strategies to encourage and provide environmentally-friendly transportation options.
<p><i>Score explanation: JHSOM and the East JHU campus have adopted the "Blue Jay Shuttle" rideshare program which offers service to all affiliates in a specified radius. The institution's shuttles are transitioning to electronic buses beginning in 2024. Some other initiatives that exist among the broader institution, are the <a href="#">Transportation Services Team's Electric and Hybrid Vehicle grants</a>.</i></p>	

<b>6. Does your <u>medical school</u> have an organics recycling program (compost) and a conventional recycling program (aluminum/paper/plastic/glass)?</b>	
2	Yes, the medical school has <b>both</b> compost <b>and</b> recycling programs accessible to students and faculty.
1	The medical school has <b>either</b> recycling <b>or</b> compost programs accessible to students and faculty, but not both.
0	There is <b>no</b> compost or recycling program at the medical school.
<p><i>Score explanation: AMEB has multiple waste bins located throughout the building for trash, recycling and composting. The buildings are accessible to students and faculty and are near major spaces used in the building. There is also a strong pipette recycling program.</i></p>	

<b>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)?</b>	
3	Yes, the medical school has <b>adequate</b> sustainability requirements for food and beverages, including meat-free days or no red-meat, and <b>is engaged</b> in efforts to increase food and beverage sustainability.
2	There are sustainability guidelines for food and beverages, but they are <b>insufficient or optional</b> . The medical school <b>is engaged</b> in efforts to increase food and beverage sustainability.
1	There are sustainability guidelines for food and beverages, but they are <b>insufficient or optional</b> . The medical school is <b>not</b> engaged in efforts to increase food and beverage sustainability.
0	There are <b>no</b> sustainability guidelines for food and beverages.
<p><i>Score explanation: There is no true cafeteria in SOM buildings; there are a few third-party cafe spots that serve ready-to-go-type meals and drinks. The facilities administration are currently assessing the feasibility of placing some restrictions on single use plastics and looking for other ideas to help improve waste from these cafes.</i></p>	

<b>8. Does the <u>medical school</u> or <u>institution</u> apply sustainability criteria when making decisions about supply procurement?</b>	
3	Yes, the medical school has <b>adequate</b> sustainability requirements for supply procurement <b>and is engaged</b> in efforts to increase sustainability of procurement.

2	There are sustainability guidelines for supply procurement, but they are <b>insufficient or optional</b> . The medical school is <b>engaged</b> in efforts to increase sustainability of procurement.
1	There are sustainability guidelines for supply procurement, but they are <b>insufficient or optional</b> . The medical school is <b>not engaged</b> in efforts to increase sustainability of procurement.
0	There are <b>no</b> sustainability guidelines for supply procurement.
<p><i>Score explanation: According to facilities staff for the Johns Hopkins Health System, there are best practices and guidelines that exist, but these are optional. The Sustainability Leadership Council's Subcommittee for Procurement has taken steps towards building a pathway to educate and train end users who order for their department. Ideas include promoting green or more sustainable products in search results on Amazon's marketplace. Currently, it is recommended to buy recycled paper and toner cartridges, but the new paper or toner options are not restricted.</i></p>	

9. Are there sustainability requirements or guidelines for events hosted at the <u>medical school</u> ?	
2	Every event hosted at the medical school <b>must</b> abide by sustainability criteria.
1	The medical school <b>strongly recommends or incentivizes</b> sustainability measures, but they are <b>not required</b> .
0	There are <b>no</b> sustainability guidelines for medical school events.
<p><i>Score explanation: To our knowledge, there are no sustainability requirements or guidelines for events hosted at the medical school.</i></p>	

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 <b>programs</b> and <b>initiatives</b> to assist with making lab spaces more environmentally sustainable.
1	There are <b>guidelines</b> on how to make lab spaces more environmentally sustainable, but not programs or initiatives.
0	There are <b>no</b> efforts at the medical school to make lab spaces more sustainable.
<p><i>Score explanation: At JHU, there is a <a href="#">Green Labs Initiative</a>, led by the Office of Sustainability and the Sustainability Leadership Council, to engage lab users, reduce waste, and improve energy consumption while fostering collaboration between researchers, faculty, students, staff, building managers, and facilities staff.</i></p>	

11. Does your <u>institution's</u> endowment portfolio investments include fossil-fuel companies?	
4	The institution is <b>entirely divested</b> from fossil fuels <b>and</b> has made a <b>commitment to reinvest divested funds</b> into renewable energy companies or renewable energy campus initiatives.
3	The institution is <b>entirely divested</b> from fossil fuels.
2	The institution has <b>partially divested</b> from fossil fuel companies <b>or</b> has made a <b>commitment to fully divest</b> , but <b>currently</b> still has fossil fuel investments.

1	The institution has <b>not divested</b> from fossil-fuel companies, but faculty and/or students are <b>conducting organised advocacy</b> for divestment.
0	Yes, the institution has investments with fossil-fuel companies and there have been <b>no efforts</b> to change that.
<i>Score explanation: Johns Hopkins has divested, or will do so as soon as possible, its investment funds out of coal mining companies in 2017, but has continued to invest in other fossil fuel related companies. In 2021, Refuel Our Future estimates that \$417 million (9.7%) of the JHU's \$4.3 billion endowment were held in the fossil fuel industry.</i>	

<b>Section Total (16 out of 32)</b>	<b>50%</b>
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*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.*

None

## Grading

### Section Overview

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

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

*\*Within each grade bracket, a score in the top 5% (\_5 to \_9%), receives a “+”, and a score in the bottom 5% (\_0- \_4%) receives a “-”. For example, a percentage score of 78% would be a B+.*

### **Planetary Health Grades for the Johns Hopkins School of Medicine**

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

Section	Raw Score %	Letter Grade
<b>Planetary Health Curriculum (30%)</b>	$(25/72) \times 100 = 34.72\%$	D+
<b>Interdisciplinary Research (17.5%)</b>	$(13/17) \times 100 = 76.47\%$	B+
<b>Community Outreach and Advocacy (17.5%)</b>	$(7/14) \times 100 = 50\%$	C
<b>Support for Student-led Planetary Health Initiatives (17.5%)</b>	$(10/15) \times 100 = 66.67\%$	B
<b>Campus Sustainability (17.5%)</b>	$(16/32) \times 100 = 50\%$	C
<b>Institutional Grade</b>	$(34.72 \times 0.3 + 70.59 \times 0.175 + 50 \times 0.175 + 66.67 \times 0.175 + 50 \times 0.175) = 51.95\%$	C