



Planetary Health Report Card (Medicine): *University of Michigan Medical School*



2023-2024 Contributing Team:

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Summary of Findings

Overall	B-
<u>Curriculum</u>	C-
<ul style="list-style-type: none"> The University of Michigan Medical School (UMMS) includes planetary health in the EMERGMED: Climate Change and Human Health elective course offered to third and fourth year medical students. However, climate change and planetary health impacts are rarely discussed in core curriculum lectures Recommendations: Introduce lectures about climate health and offer clinical scenario exercises to expose students to health issues exacerbated by climate change. In patient skills courses, introduce students environmental exposure history-taking and basic concepts of environmental justice. 	
<u>Interdisciplinary Research</u>	A-
<ul style="list-style-type: none"> UMMS is improving its involvement in planetary health research, both peripherally through larger university research and with faculty conducting primary research in planetary health. The medical school is now a member of a global consortium for planetary health research. Recommendations: UMMS should incorporate research on planetary health topics into its priorities in existing medical departments, consider creating a new research department, and strengthen connections with departments that conduct active planetary health research. 	
<u>Community Outreach and Advocacy</u>	C-
<ul style="list-style-type: none"> University of Michigan Medical School has yet to do much outreach around planetary health. Overall, there is a lack of structure around the type of outreach to engage in, where to best complete it, and in what capacity. Recommendations: Establish community partnerships relating to planetary health. Add climate change related topics to patient education resources. Establish more training opportunities for providers in planetary health. 	
<u>Support for Student-Led Initiatives</u>	A
<ul style="list-style-type: none"> The University of Michigan Medical School supports students dedicated to planetary health. The student organization White Coats for Planetary Health receives faculty and institutional support. By enabling students to seek opportunities available through the broader institution, the school also encourages students to be engaged in co-curricular projects and research. Recommendations: The school could reduce barriers to information access by composing a list of sustainability mentors and funding resources available through the school and institution outside of the White Coats for Planetary Health group. 	
<u>Campus Sustainability</u>	B+
<ul style="list-style-type: none"> UMMS has made substantial progress in sustainable operations, and it has also been connecting well with institution-wide resources and programs. The wider university has also divested from fossil fuels and established robust transportation alternatives, which the medical school is in support of and following proposed plans and timelines. Recommendations: The recently established carbon neutrality council for the medical school has developed concrete goals, which include utilizing a greater proportion of sustainable energy and creating procurement policies that better incentivise more sustainable choices. 	

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 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 minimizes 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 in 2022, 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 medical school 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.
EMERGMED: Climate Change and Human Health 2024 is an elective course offered to third and fourth year medical students. The course introduces topics of climate change, the current and predicted impact on human health, and opportunities for mitigation of and adaptation to these changes.	

Curriculum: Health Effects of Climate Change

1.2. Does your medical school 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.
The University of Michigan Medical School offers an elective course EMERGMED: Climate Change and Human Health to third- and fourth-year medical students. A journal club is conducted through the elective where students discuss important climate events and their impacts on human health. The 1995 Chicago heat disaster is the topic of one of the journal club sessions. Additionally, the course has a	

required lecture as part of its curriculum on heat-related disease which is pre-recorded by the Virginia Commonwealth University.

1.3. 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 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.

The University of Michigan Medical School offers an elective course EMERGMED: Climate Change and Human Health to third- and fourth-year medical students. The students taking this course have a lecture by Drs. Lori and Robert Byron titled “Extreme events and Rural Medicine”. Students also have the opportunity to participate in an “Extreme Heat-related Illness” journal club based on articles related to health impacts from extreme heat conditions.

1.4. Does your medical school 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.

As part of the Scientific Trunk core curriculum, specifically during the “Infectious Disease” sequence during the Foundations of Medicine III Block, first-year students at the University of Michigan Medical School are taught about how climate change is increasing human-animal contacts which increases the spread of viral factors. This pattern is addressed multiple times in the ID lectures; however, climate change is brought up only briefly.

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.

During the University of Michigan Medical School's first-year curriculum, students learn about respiratory health during their Vital Functions I block. The roles of air pollution in the onset of several respiratory illnesses such as COPD and asthma are briefly discussed in lectures. A lecture titled "The Lung Health Crisis: The Achilles' Heel We Didn't Know We Had" dives deeper into respiratory health impacts of wildfire particulate smoke and 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.

In the elective course EMERGMED: Climate Change and Human Health, students are responsible for completing and presenting a final project on a topic of their choosing in an area of climate change and health. 1 point was awarded for this section because the presentations covered some topics about the cardiovascular health effects of climate change. The material in these presentations is viewed and studied by students taking the elective, and this serves as their exposure to the cardiovascular health effects of climate change in the curriculum.

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

In the elective course EMERGMED: Climate Change and Human Health, students had a lecture titled Climate Change: What is the Link between the Human Brain and Finding Effective Solutions. In the lecture, we not only learned about the neuroscience related to human adaptation in the face of climate change but also about the psychological effects of climate change on mood such as eco-anxiety.

1.8. 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 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>In the elective course EMERGMED: Climate Change and Human Health, a lecturer addressed food security and changes to antibiotic resistance from American farming practices in his lecture titled Biodiversity, Climate Change and Human Health. The topics of food and water security were also brought up in student-led presentations in the context of climate change's disproportionate effects on low and middle-income countries.</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>The topic of outsized impacts on marginalized populations is thoroughly explored in the elective course EMERGMED: Climate Change and Human Health. In the second week, there is both lecture and discussion on health disparities, environmental justice, and ethics. In the third week, there is an additional discussion on environmental racism and health disparities as a result of climate change. The note of outsized impacts in marginalized populations was found in a research paper associated with Dermatology topics in the core curriculum, but not enough to warrant a shift to a “2” rating. No additional information was found explicitly throughout the core curriculum.</p>	

1.10. Does your <u>medical school</u> curriculum address the unequal regional health impacts of climate change globally?	
3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.
<p>One of the primary goals of the elective course EMERGMED: Climate Change and Human Health 2022 is to “Understand the inequitable distribution of health impacts as a result of climate change, and evaluate strategies to advance environmental justice and equity.” Paired with Question 10, Week 2 and Week 3 of the elective course both address the unequal regional health impacts of climate change on an international level. This is done through pre-work readings addressing these international disparities, lectures and guided discussions. Also, as mentioned above, the Global Health Research Certificate Program provides the chance to explore global unequal health impacts.</p>	

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.

In the elective course EMERGMED: Climate Change and Human Health, students are responsible for completing and presenting a final project on a topic of their choosing in an area of climate change and health. 1 point was awarded for this section because one presentation was focused on OBGYN topics including the adverse pregnancy outcomes associated with higher exposure to pollution.

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.

The course EMERGMED: Climate Change and Human Health touches on local effects of climate change, such as an increase in Michigan physicians treating Lyme disease and cases of extreme heat in urban centers such as Detroit. Additionally, a University of Michigan neurologist and active climate activist shared her local involvement regarding climate change in Michigan and its implications for future practice.

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.

Within the EMERGMED: Climate Change and Human Health 2024 Elective Course, the pre-work labeled "Indigenous Perspectives on Planetary Health" provides support for indigenous knowledge. Throughout this video, along with the lecture and discussion that follow, the importance of the stories from indigenous populations and their perspectives are underscored.

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.

In a session for the required course "Health Systems Science" for 1st year medical students, testing for lead toxicity in children was discussed in the context of research ethics. However, impacts of other anthropogenic environmental toxins on marginalized populations are not addressed in the core curriculum.

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.

Score explanation: In a 2023 lecture in the “Nutritional Health” sequence on evidence-based diets for nutrition counseling, a variety of plant-based diets such as the Mediterranean diet and flexitarian diet, are discussed. The planetary health-related benefits of plant-based proteins and minimally processed foods are mentioned briefly. However, these points are not further detailed in the lecture slides or in the recorded audio for the presentation.

1.16. Does your medical school 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.

In the elective course EMERGMED: Climate Change and Human Health, we heard lectures from both our medical school's sustainability office and the hospital sustainability team about the emissions of our healthcare center and ways they are working to reduce our carbon footprint. Additionally, we had a student presentation specifically about the contribution to climate change from general surgery.

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 anesthesia 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)
A number of these above topics are discussed in elective content at the medical school, but none are covered in the <u>core</u> curriculum.	

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
In the elective course EMERGMED: Climate Change and Human Health, we had a lecture titled Communicating with Patients. In this lecture, we learned strategies to talk to patients about climate change and specifically reviewed recommendations for the pediatric population. UMMS students are not taught strategies to discuss the health effects of climate change during their core pre-clinical or clinical coursework.	

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

2	Yes, the core curriculum includes strategies for taking an environmental history.
1	Only elective coursework includes strategies for taking an environmental history.
0	No, the curriculum does not include strategies for taking an environmental history.

In the elective course EMERGMED: Climate Change and Human Health, we had a lecture titled Environmental History Taking and Cases. UMMS first-year students also participate in a longitudinal Doctoring course. While these sessions frequently cover social determinants of health, students are not instructed on methods to conduct an environmental exposure history. Potential additions to the doctoring course include listing common patient presentations linked to environmental exposures (e.g., extreme heat, pesticide exposures) and learning the intersections between environmental health and health care access.

Curriculum: Administrative Support for Planetary Health

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

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.

The medical school is currently partnering with Columbia University to produce a video series of experts in planetary health and specific organ systems to be utilized as a resource across the country for inclusion into medical school curriculum, including as optional supplementary lectures as part of our core curriculum. Leaders of the student organization White Coats for Planetary Health have also met with the UMMS education deans to determine avenues for incorporating planetary health into the first year student curriculum.

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

6	Planetary health/ESH topics are well integrated into the core medical school curriculum.
4	Some planetary health/ESH topics are appropriately integrated into the core medical student curriculum.
2	Planetary health/ESH is not integrated and is primarily addressed in (a) standalone lecture(s) .
0	There is minimal/no education for sustainable healthcare.

Planetary Health/ESH education is most extensively covered in the "Doctoring" course work and with topics such as infectious disease in the M1 curriculum.. However, planetary health curriculum is not covered to the extent that it would be considered "appropriately integrated". Almost all other topics regarding planetary health are only addressed in elective coursework/stand alone lectures.

1.22. Does your medical school employ a member of faculty to specifically oversee and take responsibility for the incorporation of planetary health and sustainable healthcare as a theme throughout the course?

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.

No, the University of Michigan Medical School does not 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 curriculum

Section Total (29 out of 72)	40.28%
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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.

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 medical school?

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.

There are now faculty members at the medical school with a primary research focus in planetary health, specifically in environmental and occupational exposures, including one of the [co-faculty directors](#) of the White Coats for Planetary Health student organization. There are also several [faculty in the Institute of Health Policy and Innovation](#) who focus on environmental health issues.

2.2. Is there a dedicated department or institute for interdisciplinary planetary health research at your institution?

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.

Currently, the University of Michigan Medical School does not have a dedicated department or institute to planetary or environmental health research, however faculty at the medical school are leaders in the [Institute for Healthcare Policy and Innovation](#) (IHPI). IHPI focuses on supporting cross-disciplinary research needed to inform policy addressing the climate-related threats to health and healthcare systems. Additionally, the School of Public Health (part of the main institution) has a [Department of](#)

[Environmental Health Sciences](#) with a number of researchers studying the impact of environmental toxins (e.g. PFAS) on health.

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.

There are no formal processes at the University of Michigan Medical School in which public feedback can guide the school's research agenda. There is a theoretical process for which community members may impact the health system's priorities, but the process is not seeking out suggestions for climate health specifically and does not necessarily apply to the actual Medical School. The Climate Change and Human Health Elective does bring in guest speakers from local environmental justice organizations to speak on current issues and needs, but this does not impact the research agenda of the school and is given to a subset of students that sign up for the elective.

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.

The [Graham Sustainability Institute](#) and [Planet Blue](#) (a university-wide sustainability initiative) at the University of Michigan both have comprehensive websites with information on the University's sustainability goals, fellowships for students and researchers, a database of sustainability researchers within the university, and a list of events related to climate change and sustainability. In October 2023, University of Michigan President Santa Ono released the university's [climate action goals](#), which summarized the university's sustainability achievements in 2023. Future action includes further efforts to improve Michigan Medicine's sustainability efforts.

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.

The Environmental Health Sciences Program at U of M hosted the 2023 Environmental Health Sciences Symposium on Friday, March 10th, 2023. The theme of this year's symposium was environmental contamination, and was titled "Tackling Environmental Contamination: The Role of Science, Policy, and Activism." This symposium featured talks from Bill Suk, the founding director of the Superfund Research Program, members of the Coalition for Action on Remediation of Dioxane, a local partnership organization focused on mitigating groundwater contamination from 1,4-Dioxane in Washtenaw County, and Robert Bilott, an environmental attorney renowned for his legal victories on PFAS contamination. In addition, students from many different departments across campus presented posters.

The Center for Global Health Equity, which is affiliated with the medical school, is planning to host the first [Climate Vulnerability and Health Symposium](#) on March 25, 2024. This event will unite researchers across campus to discuss their efforts toward achieving global health equity as it relates to the climate crisis. There will also be a panel discussion with climate education leaders from institutions across the country.

As far as medical school-specific events, the Office of Campus Sustainability and Planet Blue have a presence at the annual Researchpalooza, an event intended to advertise and facilitate networking among the many research labs on campus.

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

The medical school is a member of the [Global Consortium on Climate and Health Education](#).

Section Total (14 out of 17)	82.35%
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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 <u>medical school</u> 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>The University of Michigan partners with various organizations that promote planetary health and environmental justice, but these partnerships are at the greater institutional level and not specifically through the medical school. Additionally, our chapter of Medical Students for a Sustainable Future as a group partners with a local organization, A2Zero. We are a part of this community group in the city of Ann Arbor which promotes climate justice, carbon neutrality, and planetary health in the community.</p>	

3.2. Does your <u>medical school</u> 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>The University of Michigan, through various programs, provides lectures open to the community on a regular basis. However, the medical school has not historically done this. Currently, the university has scheduled open lectures addressing planetary health. See listed lectures as a sample of current events.</p>	

Medical school staff have participated on the planning committee for [Earthfest](#), an annual event that celebrates sustainability initiatives across campus and the local community. However, this is not a medical school specific event.

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.

The medical school automatically enrolls students in a weekly newsletter which addresses current events in the medical school or community. This newsletter often details opportunities for students to be engaged in different upcoming events. On occasion, these opportunities, events, and news topics include environmental health topics. For example, advertising for the upcoming Climate and Health Education Conference and a creative competition hosted by the university for students to submit pieces regarding climate anxiety and climate change.

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

The University of Michigan Medical School does not have an extensive system in place that aims to educate graduates on planetary health. However, the university does occasionally offer guest lecturer series and/or mini symposiums that seek to educate on climate change and health. These are open to all students including post-graduates. While there were events of this kind hosted by other university graduate schools last year, there were none by the medical school.

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.
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1	Some affiliated hospitals have accessible educational materials for patients.
0	No affiliated medical centers have accessible educational materials for patients.
<p>The University of Michigan Medical School offers accessible educational materials for patients about environmental health exposures. One example found on the main Michigan Medicine website, and that is accessible to everyone, is a document titled "Fast Facts: Air Pollution & Brain Health". Every medical student rotates through the Ann Arbor VA Hospital, which also has similar educational materials available online through the Department of Veterans Affairs website.</p> <p>It is important to note that educational materials can be difficult to find through the websites and are largely focused on specific health concerns. So while this qualifies as a score of 2, there is room for improvement of visibility and breadth of topics covered.</p>	

3.6. Does your <u>medical school</u> or its <u>affiliated teaching hospitals</u> 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.
<p>Neither the University of Michigan Medical School nor the affiliated hospitals have accessible educational materials for patients about climate change and health impacts. Michigan Medicine's Patient Education resource bank does not include this topic. Michigan Medicine has an Environmental Stewardship website that lists current sustainability initiatives and ways for patients to become more sustainable at home, including composting, energy efficiency, and water conservation but does not include specific information about the effects of climate change on health.</p>	

Section Total (6 out of 14)	42.86%
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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.
<p>The University of Michigan as an institution has several funding options through Planet Blue, an organization at the university, for students to apply and receive funding for projects related to sustainability. Medical students are eligible to receive this funding. Medical students are also eligible to apply to the Dow Sustainability Fellows Program, an interdisciplinary fellowship that brings together students across the university from different professional programs to work together on a sustainability project for third parties, with an award of \$25,000 for a tuition stipend and additional funding for projects. Lastly, the Medical School offers a \$2,000 grant for required capstone projects that allows for most topics that students are interested in, including sustainability and health.</p>	

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.
<p>The University of Michigan Medical School encourages students to pursue research in topics they're interested in and has a number of student research funding avenues open to any kind of student research, however none are specific to planetary health or sustainable health care. White Coats for Planetary Health, our medical school's climate change and sustainability focused student organization, does advertise to all medical students the Dow Sustainability Fellows Program. Up to 10 medical</p>	

students are eligible to be nominated to the program. Majority of the projects undertaken in the fellowship are research-based while some may focus on community advocacy. All projects focus on sustainability.

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.

The University of Michigan Medical School has a Student Gateway, a website with relevant information for students pertaining to curriculum, professional development, learner wellbeing, and other areas relevant to students. This website, however, lacks specific information about planetary health and sustainable healthcare activities. The only relevant information related to sustainability on the gateway is a link to apply to dual degrees specifically in a [Master of Science from the School of Environment and Sustainability](#). The website also lacks a directory of possible mentors within the medical school specific to planetary health. Michigan Medicine, the hospital associated with the University of Michigan, does have a webpage on [environmental stewardship](#), but this website is not advertised on the University of Michigan Medical School webpages.

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.

The [White Coats for Planetary Health \(WCPH\)](#) at the University of Michigan Medical School is an affiliate organization of Medical Students for a Sustainable Future. WCPH is a student-led organization with monthly advising meetings with faculty members Dr. Alex Rabin and Dr. Katherine Hughey and has regular contact with Deans and professors in the medical school. WCPH is dedicated to educating medical students and faculty about the effects of climate change on health, planetary health, and sustainability in healthcare.

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.

Since April 2022, multiple medical students from the White Coats for Planetary Health (WCPH) student organization have served as committee members on the University of Michigan Medical School Carbon Neutrality Council. The council serves to assess and implement best sustainability practices at the medical school's facilities. Student voices are taken into consideration as formal committee members, and the Carbon Neutrality Council serves to support WCPH initiatives in return, those particularly related to sustainability.

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)

While there is no active garden run exclusively by medical students, they do have the option to be involved in several University of Michigan associated gardens and farms, including the Campus Farm and the garden at the School of Public Health.

While the Medical School itself has not hosted such initiatives in the past year, the new President of the University of Michigan is openly dedicated to carbon neutrality at the University of Michigan, which the Medical School Carbon Neutrality Council follows and supports, and he has hosted several speaker events and symposiums on planetary health that students have attended. White Coats for Planetary Health (WCPH) participated in President Ono's Climate Change Symposium and was selected as finalists. The Medical School was also invited to participate in the Dean for Academic Affairs Climate Education Provost Seminar, of which several medical students attended.

Medical students enrolled in the Climate Change and Human Health course offered as an elective at the University of Michigan Medical School participate in several guest lectures discussing environmental justice, including speakers from Detroiters for Environmental Justice and other local environmental justice organizations.

In 2023, the University of Michigan hosted the event "Thrive! Healthy People, Healthy Planet" which featured works by national and international photographers representing essentials of health in air, water, food, shelter, energy, community, safety, biodiversity, and purpose that can still be viewed online. This event was not directly hosted by the medical school, but it is accessible to medical students.

The University of Michigan as an institution has a number of volunteer opportunities for students to engage with climate change in their community. One example is the Planet Blue Ambassador Program, in which student volunteers learn about climate advocacy and are encouraged to utilize resources to make improvements in sustainability to the spaces in their college and homes. This program also serves as a networking medium through which participants can share ideas and meet potential collaborators.

The University of Michigan Medical School has a Wilderness Medicine Elective for students which involves learning survival medicine skills, a canoe trip, and other workshops to teach students about engaging with the world and the environment.

Section Total (13 out of 15)	86.67%
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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.

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>Established in 2009, the University of Michigan has an Office of Campus Sustainability (OCS) which is a department of Facilities and Operations, and part of the larger university-wide Planet Blue Campus. It employs a full-time staff of 25 people. One member of the team is Jack Gosselin, who is the regional energy manager specifically for the medical school. There is also a Certified Energy Manager on staff as part of the facilities team that serves medical school buildings. Additionally, leadership at the highest levels of Michigan Medicine has begun to carve out positions for sustainability. T. Anthony Denton, for example, currently serves as the Chief Environmental, Social, and Governance Officer for U of M Health. Furthermore, Shana Weber currently serves as the vice president of sustainability for the entire university, and the medical school has its own wing under her leadership.</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

In 2021, the University of Michigan set a goal of reaching carbon neutrality by 2025 for both scope 1 and scope 2 emissions. In 2022, the medical school established a Carbon Neutrality Council to define a [plan](#) for achieving these goals. The Council also intends to create a plan for Scope 3 emissions reductions in 2025. The plan is to achieve carbon neutrality by 2040, in line with the University's overall goal.

5.3. Do buildings/infrastructure used by the medical school 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.

At present, >20% but less than <80% of medical school buildings are powered by renewable energy sources. This value will increase to at least 40-50% by next year, because the University at large signed a power purchase agreement with DTE's MIGreenPower program in 2021 to increase reliance on renewable energy sources. Looking forward, the medical school is projected to transition to geothermal heating and cooling power in years 15-20 of a projected 25 year process for the University of Michigan.

5.4. Are sustainable building practices utilized for new and old buildings on the medical school 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.

Michigan Medicine requires all new buildings and construction projects with a budget of \$10,000,000 or more to meet Leadership in Energy and Environmental Design (LEED) Silver level. Currently, the medical school's Taubman Health Science Library, Medical Science Buildings I and II, and the Biomedical Science Research Building are not LEED certified. Although there are no plans to achieve LEED certification, major renovations are underway in several buildings, which will include the implementation of energy efficient systems such as heat pumps.

5.5. Has the medical school or institution 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.

On the University of Michigan’s Ann Arbor campus, there is the Blue Bus fleet which provides free public transportation for all students, staff, and faculty seven days a week. This bus system has stops at different points on each of the sides of the major hospital, as well as routes that reach the VA hospital and several that stop at the health sciences student library. This fleet is projected to be entirely electric by 2035. See page 67 of the [President’s Commission on Carbon Neutrality Final Report](#). Additionally, as of 2023, the university has also purchased 4 new **all-electric** busses that serve all University of Michigan students

The Ride is an Ann Arbor area bus system that is also available for free to students with a valid M-card. U of M also partners with Zipcar to provide car sharing access at the Ann Arbor campus. There are fifteen electric vehicle charging stations available for use by students, and in 2012 the University of Michigan was named a “Bike Friendly University” by the League of American Bicyclists with over 8,500 bike parking spaces on the Ann Arbor campus, including the medical school. There are also two rideshare programs available to and encouraged for students at the University of Michigan. AATA iShareARide is offered through the Ann Arbor Transportation Authority, and Vanpool is available for students in the clinical trunk.

5.6. Does your medical school 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.

The medical school has both compost and recycling programs accessible to students and faculty. Compost bins are available throughout the medical school library and university hospital patient food operations. Conventional recycling is also available. All food scraps in the medical school library are being composted as well, and it's estimated by the Office of Campus Sustainability that approximately 40% of waste is being diverted from a landfill as a result.

5.7. Does the medical school 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>There are guidelines but they are optional. The medical school is trying to increase sustainable options and encourage sustainable/zero waste events. Most food vendors in the medical school and hospital have vegetarian/vegan options and uses compostable packaging. The hospital is moving towards canned/boxed water instead of plastic bottled water. When booking events, users who intend to serve food are provided with resources on how to host a zero waste event. Medical students have also created a sustainable events guide to provide information on zero waste caterers and compostable supply procurement.</p>	

5.8. Does the <u>medical school</u> or <u>institution</u> apply sustainability criteria when making decisions 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.
<p>The University of Michigan Procurement Services has recommendations for sustainable purchasing resources, including a list of lab equipment and cleaning suppliers. In addition, lab renovations and kitchen remodeling contracts take sustainability into account. For instance, purchase of energy efficient equipment is prioritized. However, there are no specific requirements for sustainable supply procurement across the University. In 2021, the University set a goal to eliminate scope 3 emissions, including those from procurement, though no specific plans are in place.</p>	

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.
Overall events are strongly recommended to take sustainable measures , though not required. Larger events have been more successful in these efforts.	

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.
The University of Michigan Office of Campus Sustainability has several initiatives in place to make labs more environmentally sustainable. Labs can apply for a " Sustainable Laboratory Certification ," based on their energy conservation and waste reduction practices. There is also a program titled "Chemical, Equipment, and Materials (ChEM) Reuse Program," which facilitates exchange of surplus materials between labs. In addition, the Carbon Neutrality Council, which is based in the medical school, is promoting these programs and hosting open houses to share recommendations with labs across campus. For instance, energy conservation methods include closure of fume hoods and freezer consolidation.	

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.
The University of Michigan changed their investment strategy in 2021 so that it is no longer investing in the top 100 coal or public oil and gas companies. In addition, the Board of Regents approved a \$140 million investment in funds for renewable energy development.	

Section Total (24 out of 32)	75.00%
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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.

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 University of Michigan Medical School

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

Section	Raw Score %	Letter Grade
Planetary Health Curriculum (30%)	$(29/72) \times 100 = 40\%$	C-
Interdisciplinary Research (17.5%)	$(14/17) \times 100 = 82\%$	A-
Community Outreach and Advocacy (17.5%)	$(6/14) \times 100 = 43\%$	C-
Support for Student-led Planetary Health Initiatives (17.5%)	$(13/15) \times 100 = 87\%$	A
Campus Sustainability (17.5%)	$(24/32) \times 100 = 75\%$	B+
Institutional Grade	62.29%	B-

Report Card Trends

Section Overview

This graph demonstrates trends in overall and section grades for the years in which the University of Michigan Medical School has participated in the Planetary Health Report Card initiative.

