Planetary Health Report Card (Medicine) 2026:

University of Michigan Medical School

2025-2026 Contributing Team:

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Land acknowledgment: We acknowledge that The University of Michigan, named for Michigami, the world's largest freshwater system and located in the Huron River watershed, was formed and has grown through connections with the land stewarded by Niswi Ishkodewan Anishinaabeg: The Three Fires People who are the Ojibwe, Odawa, and Boodewadomi along with their neighbors the Seneca, Delaware, Shawnee, and Wyandot nations. Today we benefit from access to land and resources originally acquired through the Treaty at the Foot of the Rapids, a coercive and unfulfilled treaty which promised reciprocity, mutual respect, and access to education.

Summary of Findings

Overall Grade	B

Curriculum	C-

- The University of Michigan Medical School (UMMS) offers an elective course titled EMERGMED: Climate Change and Human Health for third and fourth year medical students. However, climate change and planetary health impacts are briefly discussed in the core curriculum lectures.
- **Recommendations:** The student organization, White Coats for Planetary Health, have finished creating and are in the process of establishing supplementary materials about climate change and planetary health impacts to be added to the core curriculum, however, these are not yet available for this year's curriculum.

Interdisciplinary Research	B+

- UMMS is improving its involvement in planetary health research with faculty conducting primary research in planetary health. The medical school is 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. They should allow space for public input on the research agenda, especially from communities disproportionately impacted by environmental injustice.

Community Outreach and Advocacy	B

- The University of Michigan partners with environmental organizations and provides lectures open to the community about planetary health, however the Medical School has yet to do much outreach around planetary health.
- **Recommendations**: Establish community partnerships relating to planetary health. Add more robust climate change health impacts to patient education resources. Establish more training opportunities for providers in planetary health.

Support for Student-Led Initiatives	A

- UMMS supports students dedicated to planetary health through funding opportunities for students to engage in research and projects, however, there are no programs specifically for planetary health. There is a student organization, White Coats for Planetary Health (WCPH), dedicated to planetary health with climate-focused faculty support.
- **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 WCPH group.

Campus Sustainability	A-

- The University of Michigan has an office of sustainability, and set the goal of reaching carbon neutrality by 2025. UMMS has a carbon neutrality council that works to help the medical school utilize a greater proportion of sustainable energy and more sustainable choices.
- **Recommendations**: Building infrastructure, especially related to new and continuous renovations, should utilize more renewable energy.

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 health professional 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 health professional training. It is imperative that we hold our institutions accountable for educating health professional 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 colour, 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 health professional schools, we have created a Planetary Health Report Card that students internationally can use to grade and compare their institutions on an annual basis. This student-driven initiative aims to compare health professional 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 centred on environmental health impacts 5) school campus sustainability.

Definitions & Other Considerations

Definitions:

- **Planetary Health:** is described by the Planetary Health Alliance as "the health of human civilisation and the state of the natural systems on which it depends." For example, topics such as climate change, declining biodiversity, shortages of arable land and freshwater, and pollution would all fall under the realm of planetary health. Both planetary health and traditional 'environmental health' examine the relationship between human health and the external environment, including extreme temperatures, chemicals, vector-borne diseases, etc. Planetary health explicitly concerns itself with the potential health harms associated with human-caused perturbations of natural systems. Therefore, the human health focus of planetary health makes the field well-adapted for the context of health professional 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/Department vs. Institution:** When "Medical school" is specified in the report card, this only refers to curriculum and resources offered by the School/department 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 including all of its campuses. 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 (Curriculum Section):** This is a series of questions students 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 mould 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. Please be as specific as possible when providing evidence for this metric.

- **Elective:** The word "elective" refers to an optional course or lecture series that a 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.

- **Core Curriculum:** This refers to the taught material that is delivered to the entire cohort of students in one year.

- **Clerkship / Outreach:** 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, outreach or placements. This is a relatively short (approximately 4-8 weeks) period of study and patient-centred clinical experience that takes place as part of the undergraduate programme.

- **Clinical rotation:** This is a term used to refer to placements that students go on (e.g., ophthalmology, surgery, cardiology).

- **Physiotherapy vs Physical Therapy:** For the purposes of this report card these terms are considered interchangeable. However, physiotherapy will be used primarily.

- **Community organisations:** For most institutions, there are existing groups that are not directly affiliated with the university and exist as a product of what the community the institution exists in cares about or needs. These specific community organisations relevant to this report include those that are focused around some aspect of climate and health preservation. These community organisations can include but are not limited to local mutual aid initiatives, underserved-resource distribution groups, clean-up and nature conservation groups, community gardeners, and other environmental-related organisations. If your institution does not have access to local volunteerships with community groups, please report any community organisations your institution or school has collaborated with.

- **Climate justice:** The idea that certain population groups and geographical locations which are disproportionately more impacted by climate change are already economically and socially disadvantaged. This double vulnerability sits alongside pre-existing social justice concerns and should therefore shift policy and practice to mitigate the inequitable effects of the climate crisis.

- **Extractivism:** The removal of natural resources typically in large quantities. Within anthropology this term is often used in the context of colonialism to refer to the

historic seizing of natural resources, a practice which has developed business models tied to ecological degradation and loss of biodiversity.

- **Global South:** Nations that often have less economic and industrial development and are typically in the southern hemisphere. These nations have been found to be disproportionately impacted by the climate crisis.

- **Low socioeconomic status (SES):** An individual or geographical area that across a variety of socioeconomic factors (e.g., income, education, race/ethnicity) is considered vulnerable. This vulnerability has been correlated to more adverse health outcomes often as a consequence of encountering more barriers in accessing and receiving healthcare.

- **Low and Middle-Income Countries (LMIC):** Countries that have lower degrees of economic affluence.

- **Anthropogenic:** Created through human activity

- **Marginalized communities:** Groups excluded from mainstream economic, educational, social, and/or cultural experiences due to race, gender identity, sexual orientation, age, physical ability, language, and/or immigration status (Sevelius et al., 2020).

Scoring Matrix

- Elective coursework (1 point): This score applies to material that is actively selected by the students such as a module choice, or additional lecture series. By implication, only a given proportion of the cohort will receive this taught material.
- Brief coverage in the core curriculum (2 points): This score applies where a topic is covered only briefly in a core curriculum session. This implies that the entire cohort receives the same material. At minimum brief inclusion would qualify as inclusion in a single lecture slide in a single year.
- In depth coverage in the core curriculum (3 points): This score applies where a topic is taught in significant detail or where a topic is repeatedly brought up in different years. This might look like several dedicated lecture slides, or inclusion of the same topic in different lectures and teaching formats.

Other considerations:

- If there are more than one “tracks” at your institution 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). Where possible please indicate the proportion of students that are on each track.

Updated in 2025, a complete literature review by metric is available for the 2024/25 Medicine Report Card Template. This largely translates across disciplines although we are hoping to expand this process across all of our covered disciplines. A link to the 2025 literature review by metric is available here.

Planetary Health Curriculum

Section Overview: ***This section evaluates the integration of relevant planetary health topics into the medical school curriculum.*** *Today's health professional students will be on the frontlines of tackling the health effects of climate and other environmental changes. Therefore, it is critical that 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?	
Yes, the medical school has offered **more than one** elective whose primary focus is ESH/planetary health in the past year. (3 points)	
Yes, the medical school has offered **one** elective whose primary focus is ESH/planetary health in the past year. (2 points)	
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. (1 point)	
No, the medical school has **not** offered any electives on planetary health or electives that include ESH/planetary health topics in the past year. (0 points)	
Score Assigned:	2
Score explanation: 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?	
This topic was explored **in depth** by the **core** curriculum. (3 points)	
This topic was **briefly** covered in the **core** curriculum. (2 points)	
This topic was covered in **elective** coursework. (1 point)	
This topic was **not** covered. (0 points)	
Score Assigned:	1

Score explanation: 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 had a lecture titled Overview of Climate Change and Human Health which covered the health effects of extreme heat. Students have also given their student-led presentation focused on heat and related health risks. Additionally, the course has a required lecture as part of its curriculum on Heat-related Disease which is pre-recorded by Dr. Jeremy Hoffman from the Virginia Commonwealth University, which was then discussed in class.

1.3. Does your <u>medical school</u> curriculum address the impacts of extreme weather events on individual health and/or on healthcare systems?	
This topic was explored **in depth** by the **core** curriculum. (3 points)	
This topic was **briefly** covered in the **core** curriculum. (2 points)	
This topic was covered in **elective** coursework. (1 point)	
This topic was **not** covered. (0 points)	
Score Assigned:	2
Score explanation: 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 had a lecture titled Extreme events and Rural Medicine. Additionally, we had a lecture from Dr. Sue Anne Bell about the healthcare system response to disaster events in the US and abroad, which is a part of the core curriculum for M3 students during "Branches launch" . This would be awarded 2 points because these opportunities are found within elective and core coursework, albeit briefly.	

1.4. Does your <u>medical school</u> curriculum address the impact of climate change on the changing patterns of infectious diseases?	
This topic was explored **in depth** by the **core** curriculum. (3 points)	
This topic was **briefly** covered in the **core** curriculum. (2 points)	
This topic was covered in **elective** coursework. (1 point)	
This topic was **not** covered. (0 points)	
Score Assigned:	2
Score explanation: As part of the Scientific Trunk core curriculum, specifically during their Foundations of Medicine III block which covers infectious diseases, 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.	

Additionally in an elective course EMERGMED: Climate Change and Human Health, offered to M3 and M4 students, Dr. Emily Abdoler specifically discusses the clinical implications for changes in infectious disease from climate change. Because of presence in both elective and core coursework, 2 points are awarded for this section.

1.5. Does your <u>medical school</u> curriculum address the respiratory health effects of climate change and air pollution?	
This topic was explored **in depth** by the **core** curriculum. (3 points)	
This topic was **briefly** covered in the **core** curriculum. (2 points)	
This topic was covered in **elective** coursework. (1 point)	
This topic was **not** covered. (0 points)	
Score Assigned:	2
Score explanation: 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. *Additionally in an elective course EMERGMED: Climate Change and Human Health students had a lecture by Dr. Alexander Rabin titled Respiratory Health and Climate Change. In this lecture, we learned about specific impacts of pollution on asthma and COPD. Dr. Rabin also discusses these topics in a presentation in the core "Branches Launch" that all M3 students attend. This topic is briefly discussed in the Doctoring course for M1 students.*	

1.6. Does your <u>medical school</u> curriculum address the cardiovascular health effects of climate change, including increased heat?	
This topic was explored **in depth** by the **core** curriculum. (3 points)	
This topic was **briefly** covered in the **core** curriculum. (2 points)	
This topic was covered in **elective** coursework. (1 point)	
This topic was **not** covered. (0 points)	
Score Assigned:	1
Score explanation: In the elective course EMERGMED: Climate Change and Human Health to third- and fourth-year medical students. Students taking this elective 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?	
This topic was explored **in depth** by the **core** curriculum. (3 points)	
This topic was **briefly** covered in the **core** curriculum. (2 points)	
This topic was covered in **elective** coursework. (1 point)	
This topic was **not** covered. (0 points)	
Score Assigned:	1
Score explanation: In the elective course EMERGMED: Climate Change and Human Health, students had a lecture from Dr. Ann-Christine Duhaime 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?	
This topic was explored **in depth** by the **core** curriculum. (3 points)	
This topic was **briefly** covered in the **core** curriculum. (2 points)	
This topic was covered in **elective** coursework. (1 point)	
This topic was **not** covered. (0 points)	
Score Assigned:	2
Score explanation: Previously in 2024, awarded one point because in the elective course EMERGMED: Climate Change and Human Health, Dr. Johannes Foufopoulos 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. In 2025-2026, Dr. Foufopoulos has not given his presentation and though student presentations have touched on food and water security, there has not been discussion of ecosystem health. However, Dr. Simone Charles has given a presentation as part of the required "Branches Launch" for M3 students that discusses the relationship between climate change, ecosystems, and individual patient security. Therefore, awarding 2 points.	

1.9. Does your medical school curriculum address the outsized impact of climate change on marginalised populations such as those with low SES, women, communities of colour, Indigenous communities, children, homeless populations, and older adults?
This topic was explored **in depth** by the **core** curriculum. (3 points)
This topic was **briefly** covered in the **core** curriculum. (2 points)

This topic was covered in **elective** coursework. (1 point)	
This topic was **not** covered. (0 points)	
Score Assigned:	2
Score explanation: 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. *Additionally, Dr. Simone Charles's lecture as part of the required M3 "Branches Launch" climate & health session discusses the disparate impact of climate change on vulnerable groups. Because it is only covered in this one session, awarding 2 rather than 3 points.*	

1.10. Does your <u>medical school</u> curriculum address the unequal regional health impacts of climate change globally?	
This topic was explored **in depth** by the **core** curriculum. (3 points)	
This topic was **briefly** covered in the **core** curriculum. (2 points)	
This topic was covered in **elective** coursework. (1 point)	
This topic was **not** covered. (0 points)	
Score Assigned:	1
Score explanation: 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. Additionally, Dr. Marie O'Neill gives a lecture titled "Environment and Global Public Health" as part of this week's targets. Also, as mentioned above, the Global Health Research Certificate Program provides the chance to explore global unequal health impacts.	

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

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

Score Assigned:	0
Score explanation: In previous years, 1 point was awarded from the elective course EMERGMED: Climate Change and Human Health (available to third- and fourth-year medical students) as some students presented on OBGYN topics including the adverse pregnancy outcomes associated with higher exposure to pollution. In 2025-2026, this has not been focused on in presentations, so 0 points were awarded. We have hopes for the optional materials to have closed captioning done soon, and become available as supplementary materials for the curriculum in the near future, but they are not available this year.	

1.12. Does your <u>medical school</u> curriculum address important human-caused environmental threats that are relevant to the university's surrounding community?	
This topic was explored **in depth** by the **core** curriculum. (3 points)	
This topic was **briefly** covered in the **core** curriculum. (2 points)	
This topic was covered in **elective** coursework. (1 point)	
This topic was **not** covered. (0 points)	
Score Assigned:	1
Score explanation: The course EMERGMED: Climate Change and Human Health touches on local effects of climate change, such as with Dr. Goodrich and her presentation on research with PFAS exposure focused on the Detroit area and A2Zero efforts with Julie Roth.	

1.13. 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?	
This topic was explored **in depth** by the **core** curriculum. (3 points)	
This topic was **briefly** covered in the **core** curriculum. (2 points)	
This topic was covered in **elective** coursework. (1 point)	
This topic was **not** covered. (0 points)	
Score Assigned:	1
Score explanation: Within the EMERGMED: Climate Change and Human Health 2024 Elective Course, the pre-work labeled "Indigenous Perspectives on Planetary Health – Dr. Nicole Redvers" 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. Preference would be for a synchronous presentation for the elective, but we have not yet found a live speaker.	

1.14. 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 colour, children, homeless populations, Indigenous populations, and older adults?	
This topic was explored **in depth** by the **core** curriculum. (3 points)	
This topic was **briefly** covered in the **core** curriculum. (2 points)	
This topic was covered in **elective** coursework. (1 point)	
This topic was **not** covered. (0 points)	
Score Assigned:	1
Score explanation: In the elective course EMERGMED: Climate Change and Human Health, a lecture titled Environmental Justice: Incineration in Detroit and Physicians as Advocates by Kathryn Savoie discusses the history of toxin emitting centers built in low SES neighborhoods, especially related to historical neighborhood redlining. In previous years there was 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, this session has not been held yet and current M1's are being told the HSS curriculum is changing.	

Curriculum: Sustainability

1.15. Does your <u>medical school</u> curriculum address the environmental and health co-benefits of a plant-based diet?	
This topic was explored **in depth** by the **core** curriculum. (3 points)	
This topic was **briefly** covered in the **core** curriculum. (2 points)	
This topic was covered in **elective** coursework. (1 point)	
This topic was **not** covered. (0 point)	
Score Assigned:	2
Score explanation: In a lecture 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 <u>medical school</u> curriculum address the carbon footprint of healthcare systems?
This topic was explored **in depth** by the **core** curriculum. (3 points)
This topic was **briefly** covered in the **core** curriculum. (2 points)
This topic was covered in **elective** coursework. (1 point)
This topic was **not** covered. (0 points)

Score Assigned:	1
Score explanation: 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 speaker present specifically about the contribution to climate change from medical supplies with lifespan assessment of these materials.	

1.17. Does your medical school curriculum cover these components of sustainable clinical practice in the core curriculum? (points for each)	**Score**
The health **and** environmental **co-benefits** of **avoiding** over-medicalisation, over-investigation and/or over-treatment (2 points)	0
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 fulfil this metric. (2 points) .	0
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 point)	0
Environmental impact of **surgical** healthcare on planetary health and the climate crisis, and how can it be mitigated. (1 point)	0
The impact of **anaesthetic** gases on the healthcare carbon footprint and ways to reduce anaesthesia's environmental impacts, such as total intravenous anaesthesia or choosing less environmentally harmful anaesthetic gas options with reduced greenhouse gas emissions. (1 point)	0
The impact of **inhalers** on the healthcare carbon footprint and the environmental benefit of dry powdered inhalers over metered dose inhalers. (1 point)	0
Waste production within healthcare **clinics** and strategies for reducing waste in clinical activities (e.g. single use items in the inpatient or outpatient setting) (1 point)	0
Score explanation: A number of these above topics are discussed in elective content at the medical school but not the core curriculum so points cannot be awarded. There was a brief mention of health benefits of lifestyle change instead of medical treatment from a panel presenter during a required M1 session, but this was not part of the official curriculum or in a lecture of required material.	

Curriculum: Clinical Applications

1.18. In training for patient encounters, does your medical school's curriculum introduce strategies to have conversations with patients about the health effects of climate change?
Yes, there are strategies introduced for having conversations with patients about climate change in the **core** curriculum. (2 points)

Yes, there are strategies introduced for having conversations with patients about climate change in **elective** coursework. (1 point)
No, there are **not** strategies introduced for having conversations with patients about climate change. (0 points)
Score Assigned: | 1
Score explanation: In the elective course EMERGMED: Climate Change and Human Health, we had a lecture titled Communicating with Patients by Dr. Andrew Lewandowski. 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 <u>medical school's</u> curriculum introduce strategies for taking an environmental history or exposure history?
Yes, the **core** curriculum includes strategies for taking an environmental history. (2 points)
Only **elective** coursework includes strategies for taking an environmental history. (1 point)
No, the curriculum does **not** include strategies for taking an environmental history. (0 points)
Score Assigned: | 2
Score explanation: In the elective course EMERGMED: Climate Change and Human Health, we had a lecture titled Environmental History Taking and Cases by Dr. Mallory Davis. UMMS first-year students participate in a longitudinal Doctoring course, and there is one session where environmental history taking is instructed, albeit very briefly. Some items included are asbestos/radon in the home, flooding, proximity to highways or factories, exposure to pesticides or chemicals.

Curriculum: Administrative Support for Planetary Health

1.20. Is your <u>medical school</u> currently in the process of implementing or improving Education for Sustainable Healthcare (ESH)/planetary health education?
Yes, the medical school is currently in the process of making **major** improvements to ESH/planetary health education. (4 points)
Yes, the medical school is currently in the process of making **minor** improvements to ESH/planetary health education. (2 points)
No, there are **no** improvements to planetary health education in progress. (0 points)
Score Assigned: | 2
Score explanation: 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.

1.21. How well are the aforementioned planetary health/Education for Sustainable Healthcare topics integrated longitudinally into the <u>core</u> curriculum?	
Planetary health/ESH topics are **well integrated** into the core medical school curriculum. (6 points)	
Some planetary health/ESH topics are appropriately integrated into the core medical student curriculum. (4 points)	
Planetary health/ESH is not integrated and is primarily addressed in **(a) standalone lecture(s).** (2 points)	
There is **minimal/no** education for sustainable healthcare. (0 points)	
Score Assigned:	4
Score explanation: The farthest depth of education on Planetary Health/ESH exists in the "Doctoring" course work and with topics such as infectious disease. However, within these topics, they are not extensively addressed to the threshold where they 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 <u>medical school</u> employ a member of faculty to specifically oversee and take responsibility for the incorporation of planetary health and sustainable healthcare as a theme throughout the course?	
Yes, the **medical school** has a specific faculty/staff member responsible for overseeing curricular integration of planetary health and sustainable healthcare. (1 point)	
No, the **medical school** does **not** have a specific faculty/staff member responsible for overseeing curricular integration of planetary health and sustainable healthcare. (0 points)	
Score Assigned:	0
Score explanation: 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	

1.23. Does your health professional curriculum include teaching on civic engagement/advocacy to address the environmental and structural determinants of health?	
This topic was explored **in depth** by the **core** curriculum. (3 points)	
This topic was **briefly** covered in the **core** curriculum. (2 points)	
This topic was covered in **elective** coursework. (1 point)	
This topic was **not** covered. (0 points)	
Score Assigned:	1

Score explanation: In the elective course EMERGMED: Climate Change and Human Health, there was a week dedicated to advocacy, with sessions such as Dr. DelBuono's on how to write an Op-Ed or create a narrative to then use for advocacy - specifically around the environment and effects on health. Also the Path to Excellence: Healthcare Economics and Policy elective started out with a lecture discussion on civic engagement as a physician, with plenty of examples such as creating policy around structural determinants of health. Otherwise, there is nothing in the core curriculum.

Section Total (32 out of 75)	**42.67%**

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Interdisciplinary Research

Section Overview: ***This section evaluates the quality and quantity of interdisciplinary planetary health research at the 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, institutions 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.*

2.1. Are there researchers engaged in planetary health research and healthcare sustainability research at your institution?	
Yes, there are faculty members at the **institution** who have a **primary** research focus in planetary health **or** sustainable healthcare/vetcare. (3 points)	
Yes, there are individual faculty members at the **institution** who are conducting research **related** to planetary health or healthcare sustainability, OR are part of a national/international sustainability working group, but it is not their primary research focus. (2 points)	
There are sustainability researchers at the **institution**, but not specifically associated with healthcare/vetcare. (1 point)	
No, there are **no** planetary health and/or sustainability researchers at the **institution** at this time. (0 points)	
Score Assigned:	3
Score explanation: 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.	

2.2. Is there a dedicated department or institute for interdisciplinary planetary health research at your institution?	
There is **at least one** dedicated department or institute for interdisciplinary planetary health research. (3 points)	
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. (2 points)	
There is an **Occupational and Environmental Health department**, but no interdisciplinary department or institute for planetary health research. (1 point)	
There is **no** dedicated department or institute. (0 points)	
Score Assigned:	3

Score explanation: 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 institution?	
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. (3 points)	
Yes, there is a process in which community members impacted by climate and environmental injustice **advise** the climate + environmental research agenda. (2 points)	
No, but there are **current efforts** to establish a process for community members to advise or make decisions on the research agenda. (1 point)	
There is **no** process, and **no** efforts to create such a process. (0 points)	
Score Assigned:	0
Score explanation: 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 do 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 centralises ongoing and past research related to health and the environment?
There is an **easy-to-use, adequately comprehensive** website that **centralises** 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. (3 points)
There is a website that **attempts to centralise** various campus resources related to health and the environment, but it is hard-to-use, not updated, or not adequately comprehensive. (2 points)
The **institution** has an **Office of Sustainability website** that includes **some** resources related to health and the environment. (1 point)
There is **no** website. (0 points)

Score Assigned:	3
Score explanation: 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?	
Yes, the **institution** has hosted at least one conference or symposium on topics related to planetary health in the past year. (4 points)	
Yes, the **institution** has hosted at least one conference or symposium on topics related to sustainable healthcare/vetcare in the past year. (3 points)	
Yes, the **institution** has hosted a conference on topics related to planetary health / sustainable healthcare/vetcare in the past three years. (2 points)	
The **institution** has not hosted any conferences directly, but they have provided financial support for a local planetary health event. (1 point)	
No, the **institution** has not hosted a conference on topics related to planetary health in the past three years. (0 points)	
Score Assigned:	3
Score explanation: The Environmental Health Sciences Program at U of M hosted the 2025 Environmental Health Sciences Symposium on March 14th, 2025. The theme of this year's symposium was environmental contamination, and was titled "The Quiet Crisis: How Location Impacts Health Outcomes in Underserved Communities." This symposium featured talks from Dr. Alexis J. Handal, a professor of Epidemiology and Global Public Health; Dr. Michael R. Kramer, director at the Center for Rural Health and Disparities and Mercer University professor of Community Medicine; Riyaz Kanji, a tribal law attorney and founder of Kanji & Katzen law firm; and Regina Strong, director of the Public Advocate Office of the Environmental Justice Public Advocate (OEJPA) in Michigan's Department of Environment, Great Lakes, and Energy (EGLE). In addition, students from many different departments across campus presented posters.	

2.6. Is your institution a member of a national or international planetary health or ESH/ESV organisation?
Yes, the institution is a member of a national or international planetary health **or** ESH/ESV organisation. (1 point)

No, the institution is **not** a member of such an organisation. (0 points)	
Score Assigned:	1
Score explanation: The medical school is a member of the Global Consortium on Climate and Health Education.	

Section Total (13 out of 17)	**76.47%**

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Community Outreach and Advocacy

Section Overview: ***This section evaluates a school's 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 colour. 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 institution partner with community organisations to promote planetary and environmental health?	
Yes, the **institution** meaningfully partners with **multiple** community organisations to promote planetary and environmental health. (3 points)	
Yes, the **institution** meaningfully partners with **one** community organisation to promote planetary and environmental health. (2 points)	
The **institution** does not partner with community organisations, but participates in community focused events relating to planetary health. (1 point)	
No, there is **no** such meaningful community partnership. (0 points)	
Score Assigned:	3
Score explanation: 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.	

3.2. Does your institution offer community-facing courses or events regarding planetary health?	
The **institution** offers community-facing courses or events at least once every year. (3 points)	
The **institution** offers courses or events open to the community at least once per year, but they are not primarily created for a community audience. (2 points)	
The **institution** has promoted community-facing courses or events, but was not involved in planning those courses or events. (1 point)	
The **institution** has not offered such community-facing courses or events. (0 points)	
Score Assigned:	3

Score explanation: 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.

3.3. Does your institution have regular coverage of issues related to planetary health and/or sustainable healthcare in university update communications?	
Yes, all students **regularly** receive communication updates dedicated to planetary health and/or sustainable healthcare. (2 points)	
Yes, planetary health and/or sustainable healthcare topics are regularly included in communication updates to **some courses**. (1 point)	
Students **do not** receive communications about planetary health or sustainable healthcare. (0 points)	
Score Assigned:	1
Score explanation: 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.	

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?	
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. (2 points)	
Yes, the **institution** or **main affiliated hospital trust** offers one course relating to planetary health and/or sustainable healthcare for post-graduate providers. (1 point)	
There are **no** such accessible courses for post-graduate providers. (0 points)	
Score Assigned:	1
Score explanation: The University of Michigan Medical School is incorporating planetary health into graduate medical education, seen through the "Climate Change and Sustainability" track offered through the Emergency Medicine Residency. Through this track, trainees receive a longitudinal education that prepares them for clinical practice in the context of climate change. These courses are not necessarily open to medical students but are geared primarily towards residents.	

3.5. Does your institution or its affiliated teaching hospitals have accessible educational materials for patients about environmental health exposures?	
Yes, the **institution** or **all affiliated hospitals** have accessible educational materials for patients. (2 points)	
Some affiliated hospitals have accessible educational materials for patients. (1 point)	
No affiliated medical centres have accessible educational materials for patients. (0 points)	
Score Assigned:	2
Score explanation: The University of Michigan Medical School does have accessible educational materials for patients about environmental health exposures. One example found on the main Michigan Medicine website is accessible to everyone: "Fast Facts: Air Pollution & Brain Health". Additionally, a document on asthma triggers includes air pollution as a risk factor and some counseling on awareness and avoidance of air pollution. Every medical student rotates through the Ann Arbor VA Hospital, which does have similar educational materials available online through the Veterans Affairs website. *It is important to note here, educational pieces 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.*	

3.6. Does your institution or its affiliated teaching hospitals have accessible educational materials for patients about the health impacts of climate change?	
Yes, the **institution** or **all affiliated hospitals** have accessible educational materials for patients. (2 points)	
Some affiliated hospitals have accessible educational materials for patients. (1 point)	
No affiliated hospitals have accessible educational materials for patients. (0 points)	
Score Assigned:	0
Score explanation: 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 does have 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.	

Section Total (10 out of 14)	**71.43%**

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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 institution offer support for students interested in enacting a sustainability initiative/QI project?	
Yes, the **institution** *either* offers grants for students to enact sustainability initiatives/QI projects *or* sustainability QI projects are part of the core curriculum. (2 points)	
The **institution** encourages sustainability QI projects (to fulfil 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. (1 point)	
No, the institution does not offer opportunities or support for sustainability initiatives or QI projects. (0 points)	
Score Assigned:	2
Score explanation: 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 any topics that students are interested in, including sustainability and health.	

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

Score explanation: 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 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 institution have a webpage where students can find specific information related to planetary health and/or sustainable healthcare/vetcare activities and mentors within the institution? For example, projects achieved, current initiatives underway at the medical school and/or contact of information of potential mentors.	
The institution has a webpage with specific information related to planetary health or sustainable healthcare/vetcare that includes up-to-date information on relevant initiatives and contact information of potential mentors. (2 points)	
There is an institution webpage that features some information on projects and mentors within planetary health and sustainable healthcare within the institution, but it lacks key information. (1 point)	
There is **no institution** specific webpage for locating planetary health and/or sustainable healthcare projects or mentors. (0 points)	
Score Assigned:	1
Score explanation: 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. The website includes a link to search for "experts" or researchers who are interested in a variety of topics. When using the search term, planetary health, researchers with an interest in the topic populate the website.This website, however, lacks specific information about planetary health and sustainable healthcare activities or an easy way to navigate to planetary health concepts without actively searching for it. 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 institution have registered student groups dedicated towards fostering a culture of planetary health engagement, scholarship, and advocacy on campus, supported by faculty advisors?
Yes, there is a student organisation **with faculty support** at my institution dedicated to planetary health or sustainability in healthcare. (2 points)
Yes, there is a student organisation at my institution dedicated to planetary health or sustainability in healthcare but it **lacks faculty support.** (1 point)

No, there is **not** a student organisation at my institution dedicated to planetary health or sustainability in healthcare. (0 points)	
Score Assigned:	2
Score explanation: 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 <u>department or institutional</u> decision-making council to advocate for curriculum reform and/or sustainability best practices?	
Yes, there is a student representative who serves on a department or institutional decision-making council/committee. (1 point)	
No, there is no such student representative. (0 points)	
Score Assigned:	1
Score explanation: 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 <u>institution</u> had one or more co-curricular planetary health programs or initiatives in the following categories? (1 point each)	**Score**
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)	1

Score explanation: 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.
White Coats for Planetary Health (WCPH), our student organization, has hosted events regarding climate change and health in the last year. Additionally, there is an annual, required session held for 3rd year medical students to discuss and learn more about the intersection of climate change and health. This session includes multi-disciplinary speakers.
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. Additionally, during the UM Climate Week this year, White Coats for Planetary Health hosted a community environmental justice panel which was open to and attended by students.
The School for Environment and Sustainability (SEAS) at University of Michigan hosts many events throughout the year - a select number of these events are related to artistic expressions regarding climate change and planetary health. These events are not directly hosted by the medical school, but are accessible to medical students.
This last year, White Coats for Planetary Health held a volunteer day at a local metro park during which we removed invasive species alongside the metro park staff.
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 (14 out of 15)	**93.33%**

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Campus Sustainability

Section Overview: ***This section evaluates the support and engagement in sustainability initiatives by the 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 endeavour, 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 institutions, clinics, and hospitals must set the standard for sustainable practices, and show other sectors what is possible when it comes to minimising environmental impact.*

5.1. Does your institution have an Office of Sustainability?	
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. (3 points)	
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 hospital sustainability. (2 points)	
There are **no salaried sustainability staff,** but there is a sustainability task force or committee. (1 point)	
There are **no** staff members **or** task force responsible for overseeing campus sustainability. (0 points)	
Score Assigned:	3
Score explanation: 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, 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.	

5.2. How ambitious is your institution's plan to reduce its own carbon footprint?	
The institution has a **written and approved plan** to achieve carbon neutrality by **2030** (5 points)	
The institution has a **written and approved plan** to achieve carbon neutrality by **2040** (3 points)	
The institution has a stated goal of carbon neutrality by **2040** but has **not created a plan** to reach that goal or the **plan is inadequate** (1 point)	
The institution does **not** meet any of the requirements listed above (0 points)	
Score Assigned:	5

Score explanation: 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. In 2025, the University has expanded its renewable energy with a new solar initiative, and plans to complete Scope 3 goals in 2026.

5.3. Do buildings/infrastructure used by the institution for teaching (not including the hospital) utilize renewable energy?	
Yes, institution buildings are **100%** powered by renewable energy. (3 points)	
Institution buildings source **>80%** of energy needs from off-site and/or on-site renewable energy. (2 points)	
Institution buildings source **>20%** of energy needs from off-site and/or on-site renewable energy. (1 point)	
Institution buildings source **<20%** of energy needs from off-site and/or on-site renewable energy. (0 points)	
Score Assigned:	1
Score explanation: At present, >20% but less than <80% of university and 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 utilised for new and old buildings on the institution's campus, with design and construction of new buildings and remodelling of old buildings conforming to a published sustainability rating system or building code/guideline?	
Yes, sustainable building practices are utilised for new buildings on the institution's campus and the **majority** of old buildings **have been retrofitted** to be more sustainable. (3 points)	
Sustainable building practices are utilised for new buildings on the institution's campus, but most old buildings have **not been retrofitted.** (2 points)	
Sustainable building practices are **inadequately or incompletely** implemented for new buildings. (1 point)	
Sustainability is **not considered** in the construction of new buildings. (0 points)	
Score Assigned:	2
Score explanation: 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 Taubmen 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 institution implemented strategies to encourage and provide environmentally-friendly transportation options for students and reduce the environmental impact of commuting?

Yes, the 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-utilised by students. Alternatively, the campus location is not amenable to unsustainable forms of transportation by default. (2 points)

The institution has implemented **some** strategies to provide environmentally-friendly transportation options, but the options are **unsatisfactorily** accessible or advertised. (1 point)

The institution has **not** implemented strategies to encourage and provide environmentally-friendly transportation options. (0 points)

Score Assigned:	2

Score explanation: 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 institution have an organics recycling program (compost) and a conventional recycling program (aluminium/paper/plastic/glass)?

Yes, the institution has **both** compost **and** recycling programs accessible to students and faculty. (2 points)

The institution has **either** recycling **or** compost programs accessible to students and faculty, but not both. (1 point)

There is **no** compost or recycling program at the institution. (0 points)	
Score Assigned:	2
Score explanation: 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 institution apply sustainability criteria when making decisions about the campus food and beverage selections (e.g. local sourcing, reduced meat, decreased plastic packaging)?	
Yes, the institution has a**dequate s**ustainability requirements for food and beverages, including meat-free days or no red-meat, and **is engaged** in efforts to increase food and beverage sustainability. (3 points)	
There are sustainability guidelines for food and beverages, but they are **insufficient or optional**. The institution **is engaged** in efforts to increase food and beverage sustainability. (2 points)	
There are sustainability guidelines for food and beverages, but they are **insufficient or optional.** The institution is **not** engaged in efforts to increase food and beverage sustainability. (1 point)	
There are **no** sustainability guidelines for food and beverages. (0 points)	
Score Assigned:	2
Score explanation: 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 use 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.	

5.8. Does the institution apply sustainability criteria when making decisions about supply procurement?
Yes, the institution has **adequate** sustainability requirements for supply procurement **and** is **engaged** in efforts to increase sustainability of procurement. (3 points)
There are sustainability guidelines for supply procurement, but they are **insufficient or optional.** The institution is **engaged** in efforts to increase sustainability of procurement. (2 points)
There are sustainability guidelines for supply procurement, but they are **insufficient or optional.** The institution is **not engaged** in efforts to increase sustainability of procurement. (1 point)

There are **no** sustainability guidelines for supply procurement. (0 points)

Score Assigned:	2

Score explanation: 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.

5.9. Are there sustainability requirements or guidelines for events hosted at the institution?
Every event hosted at the institution **must** abide by sustainability criteria. (2 points)
The institution **strongly recommends or incentivizes** sustainability measures, but they are **not required.** (1 point)
There are **no** sustainability guidelines for institution events. (0 points)

Score Assigned:	1

Score explanation: 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 institution have programs and initiatives to assist with making lab spaces more environmentally sustainable?
Yes, the institution has **programs** and **initiatives** to assist with making lab spaces more environmentally sustainable. (2 points)
There are **guidelines** on how to make lab spaces more environmentally sustainable, but not programs or initiatives. (1 point)
There are **no** efforts at the institution to make lab spaces more sustainable. (0 points)

Score Assigned:	2

Score explanation: 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 institution's endowment portfolio investments include fossil-fuel companies?	
The institution is **entirely divested** from fossil fuels **and** has made a **commitment to reinvest divested funds** into renewable energy companies or renewable energy campus initiatives. (4 points)	
The institution is **entirely divested** from fossil fuels. (3 points)	
The institution has **partially divested** from fossil fuel companies **or** has made a **commitment to fully divest**, but **currently** still has fossil fuel investments. (2 points)	
The institution has **not divested** from fossil-fuel companies, but faculty and/or students are **conducting organised advocacy** for divestment. (1 point)	
Yes, the institution has investments with fossil-fuel companies and there have been **no efforts** to change that. (0 points)	
Score Assigned:	4
Score explanation: 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 (26 out of 32)	**81.25%**

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Grading

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

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

Planetary Health Grades for the 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 Planetary Health Report Card.

Section	Raw Score %	Letter Grade
Planetary Health Curriculum (30%)	(32/75) x 100 = 42.67%	C-
Interdisciplinary Research (17.5%)	(13/17) x 100 = 76.47%	B+
Community Outreach and Advocacy (17.5%)	(10/14) x 100 = 71.43%	B
Support for Student-led Planetary Health Initiatives (17.5%)	(14/15) x 100= 93.33%	A
Campus Sustainability (17.5%)	(26/32) x 100 = 81.25%	A-
Institutional Grade	**(Ax0.3 + Bx0.175 + Cx0.175 + Dx0.175 + Ex0.175) = 69.23%**	**B**

Report Card Trends

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