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# Planetary Health Report Card (Medicine): *University of Minnesota-Twin Cities*

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2023-2024 Contributing Team:

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## Summary of Findings

Overall	C
<u>Curriculum</u>	C
<ul style="list-style-type: none"> <li>The University of Minnesota includes planetary health (PH) in the curriculum but lacks longitudinal integration. PH is not a learning objective in any core curriculum, is often covered superficially, and with no opportunities for ongoing feedback or student positions to advocate for PH inclusion in the new curriculum.</li> <li><b>Recommendations:</b> We recommend the medical school begins incorporating <a href="#">The Climate Change and Health</a> curriculum that was created by climate champions at UMN. We also encourage them to use this report to assess the progress of their curriculum changes and involve students to ensure the new curriculum is addressing the health impacts of climate change.</li> </ul>	
<u>Interdisciplinary Research</u>	B
<ul style="list-style-type: none"> <li>The medical school continues to be a part of the <a href="#">GCCHE</a> and has various informational websites about the university's climate efforts. They host the annual <a href="#">Midwest Climate Resilience</a> conference in Duluth, MN which brings together representatives from the public, private, and nonprofit sectors to inspire climate adaptation in Minnesotan communities.</li> <li><b>Recommendations:</b> There appear to be only two faculty members within the medical school doing research at the intersection of climate, sustainability, and health. We recommend increased efforts to recruit faculty within this area and interdisciplinary collaboration.</li> </ul>	
<u>Community Outreach and Advocacy</u>	C
<ul style="list-style-type: none"> <li>The UMN incorporates community engagement into their climate health programming, particularly through the <a href="#">Institute on the Environment</a> (IonE) and School of Nursing's <a href="#">Center for Planetary Health and Environmental Justice</a>. The Medical School does not have its own organization for planetary health with limited interaction with the existing institutional centers listed.</li> <li><b>Recommendations:</b> Increase community-facing programs and educational materials regarding the health impacts of climate change with community perspectives at the center of these resources. Initiate connection and a long-standing relationship with the IonE and Center for Planetary Health and Environmental Justice.</li> </ul>	
<u>Support for Student-Led Initiatives</u>	B
<ul style="list-style-type: none"> <li>Student-led public health initiatives are gaining momentum, albeit with limited institutional backing. Many face challenges of insufficient support from the institution, leading them to seek assistance independently.</li> <li><b>Recommendations:</b> We recommend strengthening support and availability for student-led PH initiatives, which could include a centralized PH webpage/tab that students can access for information about activities and potential mentors. We encourage a greater focus on developing co-curricular or interdisciplinary PH programs and events to promote exposure to PH specifically within the medical school.</li> </ul>	
<u>Campus Sustainability</u>	C-
<ul style="list-style-type: none"> <li>The UMN has stated its commitment to sustainability in the <a href="#">MPact 2025</a> Systemwide Strategic Plan and has updated the 2023 <a href="#">Climate Action Plan</a>. However, there is a lack of medical school-specific policies and guidelines, which is a missed opportunity to support the University's overall sustainability goals.</li> <li><b>Recommendations:</b> We suggest the medical school align more closely with the University's sustainability goals as outlined in the Climate Action Plan. Collaborating with the Office of Sustainability can ensure medical school-specific implementation and education for faculty, staff, and medical students.</li> </ul>	

# Statement of Purpose

*Planetary health is human health.*

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

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

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

# Definitions & Other Considerations

## Definitions:

- **Planetary Health:** is described by the Planetary Health Alliance as “the health of human civilisation and the state of the natural systems on which it depends.” For example, topics such as climate change, declining biodiversity, shortages of arable land and freshwater, and pollution would all fall under the realm of planetary health. Both planetary health and traditional ‘environmental health’ examine the relationship between human health and the external environment, including extreme temperatures, chemicals, vector-borne diseases, etc. Planetary health explicitly concerns itself with the potential health harms associated with human-caused perturbations of natural systems. Therefore, the human health focus of planetary health makes the field well-adapted for the context of medical school education. Throughout this report card, we use the term planetary health to refer to this broad swath of topics, but resources do not need to explicitly include the term “planetary health” to satisfy the metric.
- **Sustainable Healthcare:** As defined by the Academy of Royal Colleges, sustainable healthcare involves ensuring the ability to provide good quality care for future generations by balancing the economic, environmental, and social constraints and demands within health care settings. A sustainable healthcare system maintains population health, reduces disease burden and minimises use of healthcare services.
- **Education for Sustainable Healthcare (ESH):** is defined as the process of equipping current and future health professionals with the knowledge, attitudes, skills and capacity to provide environmentally sustainable services through health professional education, thus working to decrease the enormous environmental impact of the healthcare industry. Planetary Health Education is an integral part of this education rather than an end in itself. This is because knowledge on Planetary Health is required to be able to fully understand the necessity of sustainable healthcare as well as being part of the broader knowledge needed to fully protect and promote health. In summary, ESH is covered by the three Priority Learning Outcomes of the Centre of Sustainable Healthcare below, and Planetary Health Education is embraced in the first learning objective and is a fundamental requirement to achieve learning outcomes 2 and 3:
  1. Describe how the environment and human health interact at different levels.
  2. Demonstrate the knowledge and skills needed to improve the environmental sustainability of health systems.
  3. Discuss how the duty of a doctor to protect and promote health is shaped by the dependence of human health on the local and global environment.
- **Medical School vs. Institution:** When “medical school” is specified in the report card, this only refers to curriculum and resources offered by the School of Medicine and does not include offerings from other parts of the university (e.g. undergraduate departments (USA), other related departments (e.g. Public Health, Population Health departments). In contrast, when “institution” is specified in the report card, we are referring to the university more

broadly. Any resource reasonably accessible by medical students, no matter where in the institution the resource comes from or if it is specifically targeted for medical students, can meet this metric.

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

**Other considerations:**

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

**Added to our resources 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 <u>medical school</u> offer elective courses (student selected modules) to engage students in Education for Sustainable Healthcare or Planetary Health in the last year?	
3	Yes, the medical school has offered <b>more than one</b> elective whose primary focus is ESH/planetary health in the past year.
2	Yes, the medical school has offered <b>one</b> elective whose primary focus is ESH/planetary health in the past year.
1	The medical school does <b>not</b> have any electives whose primary focus is ESH/planetary health, but there are one or more electives that include a <b>lecture</b> on planetary health.
0	No, the medical school has <b>not</b> offered any electives on planetary health or electives that include ESH/planetary health topics in the past year.
<p><i>Score explanation:</i> The school offers one elective related to environment and health <a href="#">INMD 7523 OCCUPATIONAL &amp; ENVIRONMENTAL MEDICINE</a>. However, this course is focused more on occupational medicine practice and corporate medical direction rather than sustainable healthcare or planetary health.</p>	

## Curriculum: Health Effects of Climate Change

1.2. Does your <u>medical school</u> curriculum address the relationship between extreme heat, health risks, and climate change?	
3	This topic was explored <b>in depth</b> by the <b>core</b> curriculum.
2	This topic was <b>briefly</b> covered in the <b>core</b> curriculum.
1	This topic was covered in <b>elective</b> coursework.
0	This topic was <b>not</b> covered.
<p><i>Score explanation:</i> The relationship between extreme temperature health risks and climate change was briefly covered in a lecture titled “Social Determinants of Health” during the “Fundamentals of Medicine” block. The presenter had a slide exploring how various social determinants of health (such</p>	

as race and socioeconomic status) impact an individual's exposure and resulting health effects to extreme heat caused by climate change.

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

*Score explanation:* In the new curriculum, the disproportional impact of climate change and harmful environmental exposures was covered in a lecture titled "Social Determinants of Health" during the "Fundamentals of Medicine" block. The presenter had a slide exploring how various social determinants of health (such as race and socioeconomic status) impact an individual's exposure and resulting health effects to extreme heat caused by climate change.

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

*Score explanation:* The impact of climate change on infectious disease patterns was addressed in the legacy curriculum during an "Intro to Microbiology" lecture in Microbiology and Immunology (INMD 6812). It included a significant amount of information on the impacts of environmental factors and climate on the emergence and prevalence of infectious disease. This is not currently in the new curriculum and should be prioritised.

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

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

*Score explanation:* In the new curriculum, the impact of climate change and air pollution on respiratory health was briefly covered in a lecture titled “Social Determinants of Health” during the “Fundamentals of Medicine” block. The presenter discussed statewide trends in air pollution and how marginalised communities are disproportionately impacted. In the legacy curriculum, specifically in the course Human Health and Disease - Cardio & Resp (INMD 6808), pollution was discussed as a risk factor for developing asthma or exacerbating COPD. This was further elaborated with local examples, including the disruption of St. Paul’s Rondo neighborhood by I-94, increasing the risk of exposure to pollutants, and the corresponding risk for asthma. Furthermore, cases in which the impact of air pollution on patient health has been discussed during various sessions for the “Foundations of Clinical Thinking” course.

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

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

*Score explanation:* In the new curriculum this topic was briefly covered on one slide in the Clinical Toxicology and Environmental Health lecture in the Fundamentals of Medicine block for MS1’s. The slide listed various environmental exposures (lead, air pollution, etc.) and listed which organ systems they impacted, including cardiovascular effects. Furthermore, the legacy curriculum included a lecture on environmental and nutritional disease in which the effects of climate change on cardiovascular health were briefly discussed.

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

*Score explanation:* This topic was not discussed in either the new and legacy curriculum.

**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 <b>in depth</b> by the <b>core</b> curriculum.
2	This topic was <b>briefly</b> covered in the <b>core</b> curriculum.



1	This topic was covered in <b>elective</b> coursework.
0	This topic was <b>not</b> covered.
<p><i>Score explanation:</i> In the new curriculum this topic was covered through the Immigrant, Refugee, and Global Health pathway during the first MPact week. One half-day class session was located at a local food hub where the main focus was on the relationship between immigration, culture, dietary preferences, and health; however, a brief component discussed the environmental and health benefits of eating locally produced foods. A required session for all M1s in the Becoming A Doctor Course (week 1 of medical school) covered food insecurity, food apartheid, and the environmental impacts of the current food system.</p>	

<p><b>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?</b></p>	
3	This topic was explored <b>in depth</b> by the <b>core</b> curriculum.
2	This topic was <b>briefly</b> covered in the <b>core</b> curriculum.
1	This topic was covered in <b>elective</b> coursework.
0	This topic was <b>not</b> covered.
<p><i>Score explanation:</i> In the new curriculum, the disproportional impact of climate change and harmful environmental exposures was covered in a lecture titled “Social Determinants of Health” during the “Fundamentals of Medicine” block. The presenter had a slide exploring how various social determinants of health (such as race and socioeconomic status) impact an individual’s exposure and resulting health effects to extreme heat caused by climate change. Furthermore, another lecture titled “Clinical Toxicology and Environmental Health” in the MS1 “Fundamentals of Medicine” block, largely addresses the disproportionate impact of climate change and harmful environmental exposure in communities of color and other marginalized communities.</p>	

<p><b>1.10. Does your <u>medical school</u> curriculum address the unequal regional health impacts of climate change globally?</b></p>	
3	This topic was explored <b>in depth</b> by the <b>core</b> curriculum.
2	This topic was <b>briefly</b> covered in the <b>core</b> curriculum.
1	This topic was covered in <b>elective</b> coursework.
0	This topic was <b>not</b> covered.
<p><i>Score explanation:</i> This was not discussed in the legacy or the new curriculum.</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 <b>in depth</b> by the <b>core</b> curriculum.
2	This topic was <b>briefly</b> covered in the <b>core</b> curriculum.
1	This topic was covered in <b>elective</b> coursework.
0	This topic was <b>not</b> covered.

*Score explanation:* This is covered in INMD 7523 Occupational & Environmental Medicine, which is an elective course that covers the effect of environmental exposures on pregnancy. Reproductive health effects of industry-related toxins was briefly covered as part of the legacy curriculum as part of the Endocrine and Reproduction lectures on pregnancy.

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

*Score explanation:* In the new curriculum, the disproportional impact of climate change and harmful environmental exposures was covered in a lecture titled "Social Determinants of Health" during the "Fundamentals of Medicine" block. The presenter had a slide exploring how various social determinants of health (such as race and socioeconomic status) impact an individual's exposure and resulting health effects to extreme heat caused by climate change. Furthermore, another lecture titled "Clinical Toxicology and Environmental Health" in the MS1 "Fundamentals of Medicine" block, addressed specific, harmful environmental exposure that communities of color and other marginalized communities in Minnesota face. Additionally, in the legacy curriculum, a required lecture titled, "Reimagining Clinical Skills and Structural Competency," included a focus on structural racism and SDOH, specifically environmental exposures exacerbating health inequities. The highway construction on I-94 through the Rondo neighborhood and its lasting impacts, as well as the plans for a more sustainable [ReConnect Rondo project](#) were addressed. The discriminatory practice of redlining in Minneapolis and St. Paul, leading to re-zoning that allowed for unequal environmental pollution in certain neighborhoods was also discussed.

**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 <b>integrated throughout</b> the medical school's planetary health education
2	Indigenous knowledge and value systems as essential components of planetary health solutions are included <b>briefly</b> in the core curriculum.

1	Indigenous knowledge and value systems as essential components of planetary health solutions are included in <b>elective</b> coursework.
0	This topic was <b>not</b> covered.
<i>Score explanation:</i> This topic is not included in the curriculum.	

<b>1.14. Does your <u>medical school</u> curriculum address the outsized impact of anthropogenic environmental toxins on marginalized populations such as those with low SES, women, communities of color, children, homeless populations, Indigenous populations, and older adults?</b>	
3	This topic was explored <b>in depth</b> by the <b>core</b> curriculum.
2	This topic was <b>briefly</b> covered in the <b>core</b> curriculum.
1	This topic was covered in <b>elective</b> coursework.
0	This topic was <b>not</b> covered.
<i>Score explanation:</i> In the new curriculum, the outsized impacts of anthropogenic environmental toxins on marginalized populations was covered in a lecture titled “Social Determinants of Health” during the “Fundamentals of Medicine” block. The presenter had a slide exploring how various social determinants of health (such as race and socioeconomic status) impact an individual’s exposure and resulting health effects to extreme heat caused by climate change. Furthermore, the “Clinical Toxicology and Environmental Health” lecture during the Fundamentals block explored in-depth how structural racism is directly related to the environmental health inequities along with how environmental hazards continue to perpetuate health inequity.	

***Curriculum: Sustainability***

<b>1.15. Does your <u>medical school</u> curriculum address the environmental and health co-benefits of a plant-based diet?</b>	
3	This topic was explored <b>in depth</b> by the <b>core</b> curriculum.
2	This topic was <b>briefly</b> covered in the <b>core</b> curriculum.
1	This topic was covered in <b>elective</b> coursework.
0	This topic was <b>not</b> covered.
<i>Score explanation:</i> The new curriculum includes a session including information on the “Planetary Health Plate” as a guide for dietary patterns. In the pre-session required lecture titled “Macronutrients and Clinical Correlations”, the detrimental environmental impacts of the industrial production of meat as well as its impacts on the body when consumed were highlighted.	

<b>1.16. Does your <u>medical school</u> curriculum address the carbon footprint of healthcare systems?</b>	
3	This topic was explored <b>in depth</b> by the <b>core</b> curriculum

2	This topic was <b>briefly</b> covered in the <b>core</b> curriculum.
1	This topic was covered in <b>elective</b> coursework.
0	This topic was <b>not</b> covered.
<i>Score explanation:</i> This relationship is not covered in the legacy or the new curriculum.	

<b>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)</b>	
2	The health <b>and</b> environmental <b>co-benefits</b> of <b>avoiding</b> over-medicalisation, over-investigation and/or over-treatment
2	The environmental impact of <b>pharmaceuticals</b> and over-prescribing as a cause of climate health harm. Alternatively teaching on <b>deprescribing</b> where possible and its environmental and health co-benefits would fulfill this metric.
1	The health <b>and</b> environmental <b>co-benefits</b> of <b>non-pharmaceutical management</b> of conditions where appropriate such as exercise or yoga classes for type 2 diabetes; social group activities such as gardening for mental health conditions; active transport such as bicycle schemes. This is commonly known as social prescribing in the UK.
1	Environmental impact of <b>surgical</b> healthcare on planetary health and the climate crisis, and how can it be mitigated
1	The impact of <b>anaesthetic</b> gases on the healthcare carbon footprint and ways to reduce 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 <b>inhalers</b> on the healthcare carbon footprint and the environmental benefit of dry powdered inhalers over metered dose inhalers.
1	<b>Waste production</b> within healthcare <b>clinics</b> and strategies for reducing waste in clinical activities (e.g. single use items in the inpatient or outpatient setting)
<i>Score explanation:</i> These concepts have not been included in the new or the legacy curriculum.	

### *Curriculum: Clinical Applications*

<b>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?</b>	
2	Yes, there are strategies introduced for having conversations with patients about climate change in the <b>core</b> curriculum.
1	Yes, there are strategies introduced for having conversations with patients about climate change in <b>elective</b> coursework.
0	No, there are <b>not</b> strategies introduced for having conversations with patients about climate change

*Score explanation:* This relationship is not covered in the legacy or the new curriculum.

**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 <b>core</b> curriculum includes strategies for taking an environmental history.
1	Only <b>elective</b> coursework includes strategies for taking an environmental history.
0	No, the curriculum does <b>not</b> include strategies for taking an environmental history.

*Score explanation:* In the new curriculum, the “Clinical Toxicology and Environmental Health” lecture in the MS1 “Fundamentals of Medicine” block, addresses the importance of environmental health and strategies physicians can use to inquire about environmental factors that may affect a patient’s wellbeing. This lecture also addresses common environmental exposures various communities in MN experience to help guide to provide further guidance on important topics to discuss while taking an environmental history.

*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 <b>major</b> improvements to ESH/planetary health education.
2	Yes, the medical school is currently in the process of making <b>minor</b> improvements to ESH/planetary health education.
0	No, there are <b>no</b> improvements to planetary health education in progress.

*Score explanation:* One of the learning goals of the Public Health thread in the new curriculum is exploring the impact of climate change on human health.

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

*Score explanation:* In the new curriculum at the University of Minnesota, Planetary Health and Education for Sustainable Healthcare are covered in both Year 1 and Year 2 courses, including

Fundamentals of Medicine, the pathway courses, and Clinical Skills. Climate change and environmental exposures or risks are briefly mentioned in other courses and lectures but should be more well-integrated into the entire medical school curriculum. For example, environmental health can be discussed when students are learning about allergies in the “Immunity: Hypersensitivity” lecture (part of the Fundamentals of Medicine block). This can also be integrated into the “Epigenetics” lecture during Fundamentals of Medicine. This lecture presents a strong opportunity to discuss how specific environmental exposures play a significant role in epigenetics. Furthermore, another opportunity to discuss climate change is the nutrition lectures part of the Life Stages thread in the new curriculum. While the intersection between nutrition and human health is heavily explored, the environmental benefits of nutritious foods could also be discussed.

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

*Score explanation:* The University of Minnesota’s new curriculum includes a Public Health Thread for which there are two professors who are co-leads for the subject. One of their learning goals of this thread is to recognize the impact of climate change on human health, and another is to appreciate the importance of environmental health on individual and public health amongst other non-environment related public health learning goals. While the role the thread co-leads play in further curricular development is unclear, we believe the environmental health learning objectives of the thread and thread leads’ responsibility in ensuring these learning goals are met are sufficient to meet this criteria. However, this can be improved if the university creates more specific learning objectives regarding environmental health to ensure climate change and health are discussed from a variety of angles.

**Section Total (34 out of 72)**

**47.22%**

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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.*

<b>2.1. Are there researchers engaged in planetary health research and healthcare sustainability research at your <u>medical school</u>?</b>	
3	Yes, there are faculty members at the <b>medical school</b> who have a <b>primary</b> research focus in planetary health <b>or</b> healthcare sustainability.
2	Yes, there are individual faculty members at the <b>medical school</b> who are conducting research <b>related</b> to planetary health or healthcare sustainability, but it is not their primary research focus.
1	There are planetary health and/or healthcare sustainability researchers at the <b>institution</b> , but none associated with the medical school.
0	No, there are <b>no</b> planetary health and/or healthcare sustainability researchers at the <b>institution</b> or <b>medical school</b> at this time.
<p><i>Score explanation:</i> Two researchers from the school of medicine have a primary research focus in planetary health or healthcare sustainability. Below are brief explanations of their work.</p> <p>Researcher 1 studies the effects of air pollution on lung disease and biomarkers of lung disease. Their work in China on this topic led them to be appointed to a VA study that is actively researching the effects of deployment-related air pollution exposure (i.e. burn pits) on veterans' health.</p> <p>Researcher 2 is actively working in the areas of climate change's impact on health equity, sustainability in healthcare delivery, and the role of physician advocacy in creating evidence-based policy to address planetary health.</p>	

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

*Score explanation:* [The Institute on the Environment](#) (IonE) at the University of Minnesota is a multidisciplinary research center aimed at supporting collaborative research and initiatives related to sustainability and planetary health. Recent, notable projects the IonE has been involved in related to human health specifically include:

*Civic governance for urban community solar in Minnesota* – “The Solar Commons (SC) Project offers a new ownership model that supports community scale, urban-sited solar. University researchers are collaborating with community partners to co-design and test a digital peer governance SC dashboard tool. The public-facing dashboard assists a PV host to share solar savings with local underserved communities...”

*Nudging green but slow shipping in online retail* – “This project aims to identify an effective information strategy to nudge such customer decisions. The goal is to create a win-win-win solution for the environment, retailer, and customers by reducing the negative environmental impact of delivery without harming customer satisfaction. The project team will identify a comprehensive set of information strategies and test their nudging capacities using controlled experiments that simulate online shopping environments where green but slow shipping options commonly emerge.”

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

*Score explanation:* As this question only pertains to the medical school, there is no such process and no effort to create such a process to date. The Institute on the Environment, however, is doing work in this area.

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



1	The <b>institution</b> has an <b>Office of Sustainability website</b> that includes <b>some</b> resources related to health and the environment.
0	There is <b>no</b> website.
<p><i>Score explanation:</i> There is no centralized, comprehensive website containing information on the numerous initiatives, research, events, and funding opportunities related to planetary health at UMN. Rather, this information is hosted on websites and webpages maintained by different UMN entities such as the <a href="#">Institute on Environment website</a>, the UMN <a href="#">Minnesota Climate Adaptation Partnership website</a>, the <a href="#">Office of Academic Clinical Affairs</a>, and the <a href="#">Global Health Center’s Climate Change and Health Curriculum</a> webpage. In September of 2023, The School of Nursing announced the launch of the <a href="#">Center for Planetary Health and Environmental Justice</a> to educate future planetary health leaders, promote planetary health practice, and advance innovative research. While visiting multiple websites is an inconvenience, we acknowledge that it is technically possible to obtain an understanding of planetary health efforts at UMN.</p>	

<b>2.5. Has your <u>institution</u> recently hosted a conference or symposium on topics related to planetary health?</b>	
4	Yes, the <b>medical school</b> has hosted at least one conference or symposium on topics related to planetary health in the past year.
3	Yes, the <b>institution</b> has hosted at least one conference or symposium on topics related to planetary health in the past year.
2	Yes, the <b>institution</b> has hosted a conference on topics related to planetary health in the past three years.
1	The <b>institution</b> has not hosted any conferences directly, but they have provided financial support for a local planetary health event.
0	No, the <b>institution</b> has not hosted a conference on topics related to planetary health in the past three years.
<p><i>Score explanation:</i> The University of Minnesota Climate Adaptation Partnership (MCAP) hosted the <a href="#">Midwest Climate Resilience</a> conference Oct. 25-27, 2023 in Duluth, MN. This conference is designed to bring together representatives from the public, private, and nonprofit sectors to inspire and enable climate adaptation in communities throughout Minnesota. Event report attached <a href="#">here</a>.</p>	

<b>2.6. Is your <u>medical school</u> a member of a national or international planetary health or ESH organization?</b>	
1	Yes, the medical school is a member of a national or international planetary health <b>or</b> ESH organization
0	No, the medical school is <b>not</b> a member of such an organization
<p><i>Score explanation:</i> The medical school is a member of the <a href="#">Global Consortium on Climate and Health Education</a>.</p>	

Section Total (12 out of 17)	70.59%
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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 <b>medical school</b> partner with community organizations to promote planetary and environmental health?	
3	Yes, the <b>medical school</b> meaningfully partners with <b>multiple</b> community organizations to promote planetary and environmental health.
2	Yes, the <b>medical school</b> meaningfully partners with <b>one</b> community organization to promote planetary and environmental health.
1	The <b>institution</b> partners with community organizations, but the medical school is not part of that partnership.
0	No, there is <b>no</b> such meaningful community partnership.

*Score explanation:* Several initiatives at the University of Minnesota focus on planetary health and incorporate community outreach into their work. The U of M's Institute on the Environment (IonE) funds projects and partners with community organizations through [Mini Grant DEIJ grant programs](#), and the School of Nursing's [Center for Planetary Health and Environmental Justice](#) offers advocacy opportunities for staff, students, and patients. These initiatives constitute meaningful partnerships with community organizations, but they are created and operated by students, not the University itself.

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

*Score explanation:* The University of Minnesota offers a small selection of community-facing courses regarding planetary health such as SUST 4096 where students take part in an internship which can be completed at a variety of organizations, including a nonprofit. Several [Global Health Courses](#) are also offered to undergraduate students which provide a study abroad experience that allow students to

understand the intersection of culture, health, and the environment through a combination of in class and community learning. While these courses offered by the institution allow students to take part in community-facing courses, the medical school is not involved in these courses.

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

*Score explanation:* Medical students occasionally receive system-wide communications regarding planetary health and sustainability within the healthcare system. The Center for Global Health and Social Responsibility (CGHSR) and other student-led organizations additionally provide updates regarding sustainability and ways for students to become involved.

**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 <b>institution</b> or <b>main affiliated hospital trust</b> offers multiple in-person or online courses relating to planetary health and/or sustainable healthcare for post-graduate providers, including at least one with a primary focus of planetary health.
1	Yes, the <b>institution</b> or <b>main affiliated hospital trust</b> offers one course relating to planetary health and/or sustainable healthcare for post-graduate providers
0	There are <b>no</b> such accessible courses for post-graduate providers

*Score explanation:* In February 2024, MHealth Fairview hosted a system-wide grand rounds talk titled “[Ethics Grand Rounds: Health, Equity, and Climate Change](#)” which described the differential impact of climate change across populations and the ways in which clinical practice is implicated. Within the Medical School, there exists the [Climate Health Action Program](#) which has a goal of providing education to medical students, residents, and providers on geographically specific climate-health impacts.

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

2	Yes, the <b>medical school</b> or <b>all affiliated hospitals</b> have accessible educational materials for patients.
1	<b>Some</b> affiliated hospitals have accessible educational materials for patients.

0	<b>No</b> affiliated medical centres have accessible educational materials for patients.
<p><i>Score explanation:</i> While none of the affiliated hospital systems provide comprehensive information on environmental health exposures, all provide at least some information about individual risks and/or diseases. In November 2022, Fairview published an online <a href="#">article</a> about the environmental exposures associated with lung cancer. Hennepin Healthcare’s <a href="#">website</a> includes a history of their community and discusses the environmental harms of racist housing policies in Minneapolis. The VA’s website includes information on environmental <a href="#">exposures</a>, and briefly mentions the impact of environmental exposures and pollution on <a href="#">COPD</a>, <a href="#">asthma</a>, <a href="#">pulmonary fibrosis</a>, <a href="#">sinusitis</a>, and <a href="#">conjunctivitis</a>. The VA also provides information on the <a href="#">PACT Act</a>, which expands VA healthcare coverage for veterans with toxic exposures including air pollutants and occupational hazards. Allina health’s website includes information on <a href="#">air quality alerts</a>.</p>	

<b>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?</b>	
2	Yes, the <b>medical school</b> or <b>all affiliated hospitals</b> have accessible educational materials for patients.
1	<b>Some</b> affiliated hospitals have accessible educational materials for patients.
0	<b>No</b> affiliated hospitals have accessible educational materials for patients.
<p><i>Score explanation:</i> A <a href="#">study</a> published in December of 2023 by a research team at the University of Minnesota Medical School showed that animated short videos are effective for disseminating environmental health information; however, these videos are not yet publicly available. The Veterans Affairs’ website, <a href="#">Energy, Environment, and Fleet Program</a>, provides information on climate change, with sections describing actions the VA is taking as well as general information regarding energy and water use, vehicle ratings, and environmental justice which touches on the differential health impacts of climate change. The VA’s article, <a href="#">Adapting to Climate Change in Minnesota</a> additionally details several health impacts of climate change, such as drought and wildfires impact on air quality and respiratory health. In 2022, an Allina physician participated in a <a href="#">news story</a> on WCCO about the impact of climate change on allergies. No other affiliated health system provides information on the impact of climate change on health.</p>	

<b>Section Total (7 out of 14)</b>	<b>50%</b>
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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 <u>medical school</u> or your <u>institution</u> offer support for medical students interested in enacting a sustainability initiative/QI project?	
2	Yes, the <b>medical school</b> or <b>institution</b> <i>either</i> offers grants for students to enact sustainability initiatives/QI projects <i>or</i> sustainability QI projects are part of the core curriculum.
1	The <b>medical school</b> or <b>institution</b> encourages sustainability QI projects (to fulfill clerkship or longitudinal requirements) and offers resources to help students succeed in these projects, <b>but</b> there is no student funding available and there is no requirement to participate.
0	No, <b>neither</b> the medical school or the institution offer opportunities or support for sustainability initiatives or QI projects.

*Score explanation:* The Institute of Environment (IonE) offers mini [grants](#), up to \$3,000, to support projects addressing environmental and sustainability issues for students across the whole UMN system. The Center for Global Health and Social Responsibility offers [Global Engagement Grants](#), ranging from \$1,500 to \$15,000, to support pilot efforts in advancing sustainable and equitable health globally. Also, The Sustainable Development Goal Initiative Student Group Activity [Grant](#) is available for all students to apply for. This provides funding for UMN students to engage in activities related to the [17 Goals](#) and [The 2030 Agenda for Sustainable Development](#). In regards to the medical school, the [Climate Change Grant](#) is available for student-led initiatives with the goal of reducing medical waste.

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

*Score explanation:* There are opportunities for students to perform research related to planetary health, but these require student initiative to find a principal investigator in order to join their project. For example, The University of Minnesota Global Programs and Strategy Alliance (GPS Alliance) provides [awards](#), as a part of its Sustainable Development Goal Initiative research grant competition. However,

this opportunity is designed for faculty, staff, and researchers. Although, as of 2021, [Advancing Climate Solutions. Now](#) has emerged as a new initiative, in honor of University of Minnesota leader Tom Swain, to engage students to become part of the solution to climate change through policy-focused student internships and research initiatives.

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

*Score explanation:* The medical school website contains a handful of webpages containing information about projects and mentors in the fields of planetary health and sustainable healthcare within the institution. Such examples include the story highlighting [Earth Day 2023](#), which describes a few opportunities for engagement and associated faculty members engaged in planetary health advocacy, but it lacks key information, and is difficult to find on the medical school website.

The [University of Minnesota Sustainable Development Goals Initiative](#) has a website that provides general education, information on groundbreaking research and recent publications, and engagement with communities to address societal needs, with a strategic focus on advancing the Sustainable Development Goals (SDGs) through its long-term commitment outlined in MPact 2025. However, this is not specific to the medical school, rather the University of Minnesota as a whole. The website of the Center for Global Health and Social Responsibility features a page named "[Climate Change and Health](#)," which provides contact details for "Climate Champions"—faculty members from different health professional schools engaged in planetary health efforts, including a representative from the medical school. Additionally, the Office of Academic Clinical Affairs hosts a webpage titled "[Planetary Health and Sustainability](#)," containing relevant links pertaining to both planetary and human health. However, there is no landing webpage specifically within the medical school website that is dedicated to planetary health or consolidates related resources for easy accessibility.

**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 <b>with faculty support</b> 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 <b>lacks faculty support</b> .

0	No, there is <b>not</b> a student organization at my institution dedicated to planetary health or sustainability in healthcare.
<p><i>Score explanation:</i> The University of Minnesota Medical School's chapter of <a href="#">Medical Students for a Sustainable Future</a>, established in 2022, comprises medical students advocating for the integration of climate justice into the curriculum and community engagement efforts to enhance understanding of climate change's health impacts. The UMN Chapter of <a href="#">White Coats for Black Lives</a> is also heavily involved in social justice and advocacy, and they host a teach-in on climate justice, addressing environmental racism, and the impacts of housing insecurity.</p> <p>Furthermore, <a href="#">Health Students for a Healthy Climate</a> (HSHC) is a multidisciplinary student organization at UMN dedicated to promoting sustainability initiatives within health professional schools. Their mission involves raising awareness of the environment's influence on human health and advocating for reduced environmental footprint in healthcare institutions. Supported by annual funding from the Center for Health Interprofessional Programs (CHIP) and guided by a faculty mentor from the School of Nursing, HSHC aims to drive meaningful change in healthcare sustainability.</p> <p>Additionally, <a href="#">Students for Climate Justice at UMN</a> founded in 2019 is a student organization of the broader UMN institution that educates and mobilizes students to engage in environmental justice across the Twin Cities while advocating for systemic changes on campus to create a more just system. This meets on a weekly basis. Of note, this is not an organization specific to the medical school.</p>	

<b>4.5. Is there a student liaison representing sustainability interests who serves on a <u>medical school</u> or <u>institutional</u> decision-making council to advocate for curriculum reform and/or sustainability best practices?</b>	
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.
<p><i>Score explanation:</i> Previously, there have been opportunities for students to provide feedback on the development of the new curriculum through the Public Health Learning Objectives Feedback Group. This included assessing the learning goals for the public health threads of the new curriculum, which include the impact of climate change on human health. However, this was temporary and this role no longer exists during the first year of the new curriculum.</p>	

<b>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)</b>	
1	Projects where students are able to gain experience in organic agriculture and sustainable food systems, such as gardens, farms, community supported agriculture (CSA), fishery programs, or urban agriculture projects.
1	Panels, speaker series, or similar events related to planetary health that have students as an intended audience.
1	Events in which students learn directly from members of a local environmental justice community about the climate and environmental challenges they face, and how health professionals can partner with their community to address these exposures and impacts.



1	Cultural arts events, installations or performances related to planetary health that have students as an intended audience.
1	Local volunteer opportunities related to building community resilience to anthropogenic environmental impacts.
1	Wilderness or outdoors programs (e.g., that organize hiking, backpacking, kayaking, or other outings for students)

*Score explanation:*

**Garden:** There is an [Interprofessional Student Garden Project](#), where health professional students can help plant and sustain a garden on campus, located adjacent to the medical school and associated hospital. The collective of students are responsible for planting, maintaining, and sustaining the garden. There are weekly Plants and Chats available for students to be as involved as they want to be with the garden.

**Conferences, speaker series, symposia, or similar events:** The UMN Mini Medical School series, [Healthy Planet, Healthy Lives](#), offers several free lectures that explore the impact of planetary health on human health. Also, the [2023 Planetary Health Annual Meeting](#) was a transdisciplinary, hybrid event focused on the complexities of planetary health sciences with speakers from many disciplines. Finally, the [People & Planet:Conversation Series](#) explores the many intersections of our changing global climate, and the human and natural systems that also shape our world. Past topics included the planetary health framework, resilient food systems, drinking water contamination, and the connection between biodiversity loss and emerging infectious disease.

**Learning directly from members of a local environmental justice community:** [The UMN Chapter of White Coats for Black Lives](#) hosted a Climate Justice Event as part of their third annual Teach-In series where students learn from other students about health justice in a lecture and discussion format. The Climate Justice teach-in shared videos of local community members advocating for environmental justice and discussed the impacts of health insecurity, as well as shared opportunities for getting involved with local environmental health initiatives. Of note, this was entirely student-initiated, student-developed, and student-driven. A group of medical students also partnered with the [Urban Roots](#) organization as part of their community longitudinal project to assist them in maintaining and organizing gardens run by Urban Roots as well as teach youth about crop management. This partnership was between Urban Roots and individual medical students as opposed to an institutional collaboration. Additionally, a collection of medical students attended the Environmental Justice Tour (formerly known as the Toxic Tour) event hosted by community members in a local environmental justice committee, though UMN was not a formal partner nor a formal sponsor for this event in April 2023. To our knowledge, there are no plans for an Environmental Justice Toxic Tour in 2023.

**Cultural arts events, installations or performances:** To our knowledge, the University of Minnesota Medical School Institution has not specifically hosted any cultural arts events, installations, or performances dedicated to planetary health this year. However, the medical school does hold the Center for the [Art of Medicine Artistic Antidote Archive](#), an archive that pools art-related resources from the web that may be useful for students in their futures in medicine. One resource that is listed is the “Resilience in the Age of Climate Change: Google Arts and Culture” which is a virtual installation of visionary artists and architects exploring the meaning and impacts of global warming. However, this webpage is not well known or well advertised to students. Additionally, the [Arts and Medicine Interest Group](#) at UMN hosted a “Paint the Fall Colors” event in October 2023 where medical students walked to Chester Park to explore nature and paint the autumn leaves. This was entirely student-initiated, student-developed, and student-driven.

**Local volunteer opportunities:** Opportunities for advocacy regarding the Phillips Neighborhood Urban Farm were shared with medical students by other medical students, through emails from MS4SF, a teach-in through White Coats for Black Lives, and the Get Out the Vote event hosted by medical students, but the institution itself has not coordinated or broadcasted any opportunities. [The Ladder Program](#), a cascading mentorship initiative, allows medical students to volunteer in North Minneapolis, introducing kids to STEM opportunities. The Ladder has hosted environment-focused sessions, such as [Environmental Health & Environmental Justice](#) and [Birding Day](#) to promote environmental awareness through outdoor exploration, bird watching, and topics of environmental justice. However, these events have been underpublicized as opportunities to medical students. Additionally in the spring, PHASA hosts Community Engaged Advocacy through Gardening, partnering with [Urban Roots](#) to cultivate vegetables, empower youth, combat food insecurity, and support vital programming, embodying a vision of universal access to nature and healthy food. Although there are opportunities to engage in volunteering for medical students, all of these experiences are led and hosted by student groups, not the UMN institution. Thus, this has led to a score of 0.

**Wilderness or outdoor programs:** CHIP and BeWell co-hosted a Fall Interprofessional Hike in October 2023, where health science students had the opportunity to hike and connect with other students. This took place at the Minnesota Valley National Wildlife Refuge. Additionally, BeWell has an interprofessional running group series, which is put on each Wednesday evening, with the goal of building an interprofessional community. Finally, the Wellbeing Committee in the medical school hosts an annual walk/run across campus to invite incoming students to connect with other students while learning how to navigate the campus outdoors.

Section Total (10 out of 15)

66.67%

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

# 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 <b>at least one designated staff member</b> for sustainability at the hospital and/or medical school.
2	There is an Office of Sustainability with one or more full-time staff dedicated to campus sustainability, but <b>no specific staff member</b> in charge of medical school and/or hospital sustainability.
1	There are <b>no salaried sustainability staff</b> , but there is a sustainability task force or committee
0	There are <b>no</b> staff members <b>or</b> task force responsible for overseeing campus sustainability
<p><i>Score explanation:</i> There is an Office of Sustainability at UMN with <a href="#">multiple staff members</a>, but no specific staff member is in charge of medical school sustainability. UMN's major hospital affiliation, M Health Fairview, does outline their <a href="#">sustainability</a> efforts focused in 7 areas (energy efficiency, environmental preferable purchasing, sustainable facility design, healthy food systems, waste reduction/recycling, water conservation, and employee engagement), but this does not include medical school campus facilities or operations. The University of Minnesota also hired the first <a href="#">systemwide chief sustainability officer</a> in May of 2022 to help lead sustainability efforts across all five campuses as part of the MPact effort. Additionally, the University of Minnesota has a multidisciplinary team of <a href="#">Climate Champions</a>, which includes staff from the medical school, which aims to “connect students with faculty and community members working in health care, sustainability, and climate change.”</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 <b>written and approved plan</b> to achieve carbon neutrality by <b>2030</b>
3	The institution/medical school has a <b>written and approved plan</b> to achieve carbon neutrality by <b>2040</b>
1	The institution/medical school has a stated goal of carbon neutrality by <b>2040</b> but has <b>not created a plan</b> to reach that goal or the <b>plan is inadequate</b>
0	The institution/medical school does <b>not</b> meet any of the requirements listed above

*Score explanation:* The University of Minnesota Office of Sustainability states a goal of [becoming carbon neutral by 2050](#) and has specific programs in line with its efforts, such as the [Green Labs Program](#), achieving reducing GHG emission [50% by 2021](#) (one year ahead of schedule), achieving AASHE [gold Sustainability Tracking, Assessment & Rating System \(STARS\)](#) in Twin Cities by 2023 and hiring a systemwide chief [sustainability officer](#) to drive sustainability efforts. Carbon usage across the University is tracked on the [Carbon Dashboard](#).

The Twin Cities Campus updated their [2011 Climate Action Plan](#) as part of [MPact 2025](#) this previous year. This new [Climate Action Plan](#) outlines the university’s plan for carbon mitigation, climate adaptation, and implementation support. Within this plan, it is stated the University’s goal is to reduce carbon emissions by 60% over the next decade (compared to 2019) and again reiterated the goal of becoming carbon neutral by 2050. The plan identifies the current sustainability practices within the community and sets measurable improvements for 2033 while also outlining clear pathways for implementation. The plan also assesses the risk of impending climate changes and ways in which Minnesota has tools of resilience to manage these changes. The plan utilizes an [interdisciplinary](#) committee of students, faculty, and staff.

Additionally, the Department of Medicine within the University of Minnesota Medical School has a [Climate Health Action Program](#) which clearly states a vision of achieving a carbon-neutral healthcare system by 2040 accompanied by a list of broad goals. However, it is not clear if there is a solidified plan to reach the goal of 2040 for the university’s healthcare system.

Of note, the University’s major hospital affiliation is with M Health Fairview. With the recommendations from James Hereford and Medical School Dean Jakub Tolar, M Health Fairview established 2021 Work Plans in order to advance efforts of healthy equity, anti-racism, and inclusion. Within this [HOPE](#) Commissions document, the Effect Environmental Justice and Health Equity area noted a commitment to “implement provisions for sustainable environments by identifying 4 sustainable purchasing initiatives” and “environmental sustainability strategies will be aligned with national benchmarks”.

**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 <b>100%</b> powered by renewable energy
2	Medical school buildings source <b>&gt;80%</b> of energy needs from off-site and/or on-site renewable energy.
1	Medical school buildings source <b>&gt;20%</b> of energy needs from off-site and/or on-site renewable energy.
0	Medical school buildings source <b>&lt;20%</b> of energy needs from off-site and/or on-site renewable energy.

*Score explanation:* According to the [Office of Sustainability](#), the University's campus electricity is 28% Renewable. The [EPA](#) has ranked the University of Minnesota as #26 in the nation in regards to annual green power usage. The UMN self-reported [STARS report](#) indicates 4.99% of the University’s total energy usage comes from clean and renewable sources. In addition, [>50% energy consumption](#) is supplied by purchased gas and steam as reported on the university’s energy dashboard. This dashboard is easy to access and demonstrates the university’s transparency related to energy consumption.

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

*Score explanation:* New construction and major renovations follow interior design standards that incorporate the [University's Sustainability Requirements](#) and follow [Minnesota's B3 guidelines](#). Compliance with B3 requires meeting sustainability goals for site, water, energy, indoor environment, materials, and waste. The University tracks the energy consumption of most buildings on campus on a [public dashboard](#) and the integration of sustainable practices are tracked on the facilities management [strategic progress card](#). In the University of Minnesota Twin Cities [Campus Master Plan](#), they have Development and Re-Development as a goal under their sustainability framework. They note that "The Campus Plan envisions significant reinvestment in existing buildings in the campus cores. However, when campus needs cannot be accommodated through renovation, critical decisions about growth must consider resilience and mitigation, land use impacts, and the capacities of supporting utilities and infrastructure (energy, water, waste, vegetation, etc.)." The UMN highlights many of the updates they have made, including the addition of solar gardens, green roofs, LEED buildings, stormwater retention, and energy plant renovations on the [Sustainability Walking Tour](#). It is unclear what percentage of the campus has been retrofitted, but they have made a concerted effort to retrofit all buildings that have an established pattern of bird-glass collision through their "[Stop the Thud](#)" project.

**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 <b>environmentally-friendly transportation options</b> 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 <b>some</b> strategies to provide environmentally-friendly transportation options, but the options are <b>unsatisfactorily</b> accessible or advertised.
0	The medical school or institution has <b>not</b> implemented strategies to encourage and provide environmentally-friendly transportation options.

*Score explanation:* The Medical School is located right next to the electrically powered light rail, which many students take advantage of. All students who pay the Transportation and Safety fee as part of their tuition have unlimited access to the regional transit system in the Twin Cities area through the [Universal Transit Pass](#). The university provides a free shuttle bus service between its three portions of campus (Mpls West Bank, Mpls East Bank, and St. Paul). University Services has a webpage dedicated to [transit](#), with information and links readily available regarding public transportation, bike routes with

travel times, and walk routes with pedestrian safety/security resources. The UMN Twin Cities is recognized nationally for bicycle transportation. In addition, the UMN campus is not amenable to cars, as there is almost no free parking on campus. Campus-wide transit utilization, awards, and annual data can be found in this [report](#).

**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 <b>both</b> compost <b>and</b> recycling programs accessible to students and faculty.
1	The medical school has <b>either</b> recycling <b>or</b> compost programs accessible to students and faculty, but not both.
0	There is <b>no</b> compost or recycling program at the medical school.

*Score explanation:* The medical school has both an organics and a conventional recycling program in its buildings. In many of the common areas of the medical school buildings, including the main lobbies, main hallways, elevators, and vending machine coves, there are 3-in-1 waste bins with associated images above each section to help guide students/faculty/visitors as to which bin is most appropriate. The UMN also offers a [ReUse Program](#) to collect surplus office supplies and equipment that can be resold or redistributed. This service is accessible to medical students and staff. The University tracks its waste recovery by material on a [dashboard](#). This information includes buildings utilized by the medical school. Facilities at the University also offer assistance in hosting “[Zero Waste Events](#)” through [planning](#), signage, or extra bins.

**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 <b>adequate</b> sustainability requirements for food and beverages, including meat-free days or no red-meat, and <b>is engaged</b> in efforts to increase food and beverage sustainability.
2	There are sustainability guidelines for food and beverages, but they are <b>insufficient or optional</b> . The medical school <b>is engaged</b> in efforts to increase food and beverage sustainability.
1	There are sustainability guidelines for food and beverages, but they are <b>insufficient or optional</b> . The medical school is <b>not</b> engaged in efforts to increase food and beverage sustainability.
0	There are <b>no</b> sustainability guidelines for food and beverages.

*Score explanation:* According to the Dean’s office, the Medical School does not have any input on campus food and beverage selections or their sustainability. On the campus level, university food services, [M Food Co.](#) is provided through [Chartwells](#). The University has established food systems as one of their sustainability priorities and they work with Chartwells to establish sustainability requirements, goals, and initiatives. These include following the Monterey Bay Aquarium Seafood Watch program guidelines, the Waste Not program to measure the amount of food waste being generated, and Chartwells’ [HowGood](#) Partnership which introduces climate labeling in dining halls. Chartwells has a [plant-forward dining initiative](#), but it does not appear to be in effect within the medical

school. Note, that this is a challenging criterion given that the medical school does not have specific dining or food options, so they have limited control.

**5.8. Does the medical school or institution apply sustainability criteria when making decisions about supply procurement?**

3	Yes, the medical school has <b>adequate</b> sustainability requirements for supply procurement <b>and</b> is <b>engaged</b> in efforts to increase sustainability of procurement.
2	There are sustainability guidelines for supply procurement, but they are <b>insufficient or optional</b> . The medical school is <b>engaged</b> in efforts to increase sustainability of procurement.
1	There are sustainability guidelines for supply procurement, but they are <b>insufficient or optional</b> . The medical school is <b>not engaged</b> in efforts to increase sustainability of procurement.
0	There are <b>no</b> sustainability guidelines for supply procurement.

*Score explanation:* According to the Dean’s office, the Medical School does not have any input on supply procurement or its sustainability criteria. This is done at the campus level. On a campus level, according to the Office of Sustainability, the University applies sustainability criteria to some procurement activities depending on the type of product/service being procured (e.g. yes to construction materials, office supplies; no to specialized research materials). In the Board of Regents [Purchasing Policy](#), they state “purchasing activities shall be conducted in a manner that promotes integrity, stewardship, diversity, and sustainability,” but offers no additional guidelines. The University’s Office of Sustainability, in conjunction with its educational campaign “[It All Adds Up.](#)” assists with the implementation of environmental, social, and economic goals with respect to supplier diversity and sustainability, though the medical school itself does not appear to be involved in such efforts.

**5.9. Are there sustainability requirements or guidelines for events hosted at the medical school?**

2	Every event hosted at the medical school <b>must</b> abide by sustainability criteria.
1	The medical school <b>strongly recommends or incentivizes</b> sustainability measures, but they are <b>not required</b> .
0	There are <b>no</b> sustainability guidelines for medical school events.

*Score explanation:* According to the Dean’s office, there are no sustainability guidelines for events hosted at the Medical School. Any food, supplies and/or events are all planned at a department level by many different individuals. However, there is an updated Student Council policy in regards to funding events. These guidelines were provided by the Medical School Finance Office and aim to avoid over-ordering food as well as reduce paper plates/napkins/cutlery requests from vendors. The University Zero Waste Services provides a list of [Zero Waste Event Caterers](#) as well as [Zero Waste Purchasing Options](#), but this is not specifically endorsed or required by the medical school.

**5.10. Does your medical school have programs and initiatives to assist with making lab spaces more environmentally sustainable?**

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

*Score explanation:* The Office of Sustainability has been working with the Department of Biochemistry, Molecular Biology, and Biophysics (BMBB) to create a [Green Labs Program](#) that currently includes guidelines for energy efficiency and recycling in lab spaces. Labs can also request Green Labs stickers to encourage energy conservation. According to the Office of Sustainability, their ongoing partnership with the BMBB, specifically [The Bielinsky lab](#), has been productive, and all waste management, energy conservation practices and infrastructure changes are being piloted with the goal of expanding the program to many more labs in the future. Within the Bielinsky lab, more than 95% of paper towels and kimwipes are going into organic recycling rather than trash and the majority of plastic film and bags are being recycled rather than going to trash. However, the medical school has not been heavily involved nor are there any formalized programs or initiatives currently in place. Additionally, the University’s recycling department works directly with labs on improving recycling and organics collection. All waste is tracked on the University’s waste [dashboard](#).

**5.11. Does your institution’s endowment portfolio investments include fossil-fuel companies?**

4	The institution is <b>entirely divested</b> from fossil fuels <b>and</b> has made a <b>commitment to reinvest divested funds</b> into renewable energy companies or renewable energy campus initiatives.
3	The institution is <b>entirely divested</b> from fossil fuels.
2	The institution has <b>partially divested</b> from fossil fuel companies <b>or</b> has made a <b>commitment to fully divest</b> , but <b>currently</b> still has fossil fuel investments.
1	The institution has <b>not divested</b> from fossil-fuel companies, but faculty and/or students are <b>conducting organized advocacy</b> for divestment.
0	Yes, the institution has investments with fossil-fuel companies and there have been <b>no efforts</b> to change that.

*Score explanation:* According to local news sources, including the [Star Tribune](#) and [MN Daily](#), the University of Minnesota in September of 2021 announced its plans to fully divest from fossil companies in the next five to seven years. There has been no confirmation on this plan or further commitment details from the University of Minnesota as of Feb 10, 2023.

<b>Section Total (14 out of 32)</b>	<b>43.75%</b>
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Back to Summary Page [here](#)

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



Although not addressed above, the University of Minnesota, located along the Mississippi River, has been working to improve grounds and water stewardship. This has been achieved through [stormwater management](#), [rain gardens](#) at TCF Stadium, reclaimed water for use at cooling towers, and conversion of more than [40 acres to native prairies](#), wildflowers, or lower requirement turf (achieving [Bee Campus USA](#) in 2020), in addition to other efforts. All water usage is tracked on the [Water Dashboard](#).

## 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 Minnesota School of Medicine

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

Section	Raw Score %	Letter Grade
<b>Planetary Health Curriculum (30%)</b>	$(34/72) \times 100 = 47.22\%$	C
<b>Interdisciplinary Research (17.5%)</b>	$(12/17) \times 100 = 70.59\%$	B
<b>Community Outreach and Advocacy (17.5%)</b>	$(7/14) \times 100 = 50\%$	C
<b>Support for Student-led Planetary Health Initiatives (17.5%)</b>	$(10/15) \times 100 = 66.67\%$	B
<b>Campus Sustainability (17.5%)</b>	$(14/32) \times 100 = 43.75\%$	C-
<b>Institutional Grade</b>	<b>54.59%</b>	<b>C</b>

# Report Card Trends

## Section Overview

This graph demonstrates trends in overall and section grades for the years in which University of Minnesota Medical School has participated in the Planetary Health Report Card initiative. Please note that the University of Minnesota participated in the Planetary Health Report Card 2019-2020 cycle, but due to changing criteria the following year, felt that it did not accurately reflect the sustainability trends of the school. For reference, here are the previous reports: [2022-2023](#), [2021-2022](#), [2020-2021](#), and [2019-2020](#)

### Planetary Health Report Card Trends for the University of Minnesota Medical School

