
Planetary Health Report Card:

University of Minnesota Medical School

2019-2020 Contributing Team:

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Statement of Purpose

Planetary health is human health.

The Planetary Health Alliance defines planetary health as “a field focused on characterizing the human health impacts of human-caused disruptions of Earth's natural systems.” 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 standardized and reproducible Planetary Health Report Card that medical students nationally can use to grade and compare their home institutions. This medical-student-driven initiative aims to compare medical schools on the basis of discrete metrics in four 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. This project is inspired by the [Racial Justice Report Card](#), an initiative from White Coats 4 Black Lives that has led to substantial impactful change at medical schools around the country.

Planetary Health Curriculum

Section Overview: This section evaluates the integration of relevant planetary health topics into the medical school curriculum.

Metric	Points	Descriptor
1.1 Did your medical school offer elective courses to engage students in planetary health in the last year?	1	Yes, the medical school has offered such elective courses in the last year.
	0	No, the medical school has not offered such elective courses in the last year.
1.2 Does your medical school curriculum address the impact of climate change on the changing patterns of infectious diseases?	2	The metric is met by the core curriculum.
	1	The metric is met by elective coursework.
	0	The metric is not met.
1.3 Does your medical school curriculum address the environmental co-benefits of a plant-based diet in its nutrition lectures?	2	The metric is met by the core curriculum.
	1	The metric is met by elective coursework.
	0	The metric is not met.
1.4 Does your medical school curriculum address the potential mental health effects of environmental degradation and climate change?	2	The metric is met by the core curriculum.
	1	The metric is met by elective coursework.
	0	The metric is not met.
1.5 Does your medical school curriculum address the effects of industry-related environmental exposures (e.g. air pollution, pesticides) on pregnancy?	2	The metric is met by the core curriculum.
	1	The metric is met by elective coursework.
	0	The metric is not met.

1.6 Does your medical school curriculum address endocrine disrupting chemicals and their effects?	2	The metric is met by the core curriculum.
	1	The metric is met by elective coursework.
	0	The metric is not met.
1.7 Does your medical school curriculum address the relationships between individual patient food security, ecosystem health, and climate change?	2	The metric is met by the core curriculum.
	1	The metric is met by elective coursework.
	0	The metric is not met.
1.8 Does your medical school curriculum address the effect of air pollution on respiratory and cardiovascular health?	2	The metric is met by the core curriculum.
	1	The metric is met by elective coursework.
	0	The metric is not met.
1.9 Does your medical school curriculum address the relationship between heat-related illnesses and climate change?	2	The metric is met by the core curriculum.
	1	The metric is met by elective coursework.
	0	The metric is not met.
1.10 Does your medical school curriculum address the outsized impact of anthropogenic environmental toxins and climate change on vulnerable populations such as those with low SES, women, minorities, indigenous communities, children, and the elderly?	2	The metric is met by the core curriculum.
	1	The metric is met by elective coursework.
	0	The metric is not met.
1.11 Does your medical school curriculum identify ways to advocate for and implement sustainable best practices	2	The metric is met by the core curriculum
	1	The metric is met by elective coursework.

in health care? (for example, avoiding unnecessary OR waste)	0	The metric is not met.
1.12 Does your medical school curriculum address important environmental threats that are relevant to the university's surrounding community? (for example, fires in California)	2	The metric is met by the core curriculum.
	1	The metric is met by elective coursework.
	0	The metric is not met.
1.13 Does your institution have graduate or non-medical undergraduate level courses on planetary health open to medical student enrollment free of charge?	2	There are graduate or undergraduate level courses open to free medical student enrollment.
	1	There are graduate or undergraduate level courses but they are not open to free medical student enrollment.
	0	There are no graduate level courses related to planetary health
1.14 In training for patient encounters, does your medical school's curriculum introduce strategies to have conversations with patients about the health effects of climate change?	1	Yes, there are strategies introduced for having conversations with patients about climate change.
	0	No, there are not strategies introduced for having conversations with patients about climate change.
1.15 In training for patient encounters, does your institution's curriculum introduce strategies for taking an environmental history or exposure history?	1	Yes, the curriculum includes strategies for taking an environmental history.
	0	No, the curriculum does not include strategies for taking an environmental history.
1.16 Does your medical school have an ongoing program that offers incentives for	1	Yes, the medical school has an incentive program.

faculty/departments to develop new planetary health courses and/or incorporate planetary health into existing courses?	0	No, the medical school does not have an incentive program.
Section Total (out of 28)	7	

Score explanations:

1.1 Elective Courses

The medical school offers one elective course relating human health and the environment: [INMD 7523 Occupational & Environmental Medicine](#). This is a 4 credit course offered to MS3's and MS4's that focuses on training students to identify and manage diseases related to occupational and environmental exposures.

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1.2 Infectious Disease

The impact of climate change on infectious disease is not a covered topic in either preclinical microbiology coursework or clinical electives. As part of Essentials of Clinical Medicine (ECM), MS1s were given a discussion about the environmental impacts of antibiotics, but this did not sufficiently touch on climate change or infectious disease.

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1.3 Diet and Sustainability

The environmental co-benefits of a plant-based diet is not a topic covered in either preclinical nutrition coursework or clinical electives.

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1.4 Mental Health

The mental health effects of environmental degradation and climate change is not a topic covered in either preclinical psychology coursework or clinical electives.

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1.5 Environmental Exposures in Pregnancy

INMD 7523 Occupational & Environmental Medicine is an elective course that covers the effect of environmental exposures on pregnancy.

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1.6 Endocrine Disrupting Chemicals

INMD 7523 Occupational & Environmental Medicine is an elective course that covers endocrine disrupting chemicals and their effects.

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1.7 Food Security

The relationship between food security, ecosystem health, and climate change is not a topic covered in either preclinical nutrition coursework or clinical electives.

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1.8 Air Pollution

The effects of air pollution on respiratory and cardiovascular health is not a topic covered in either preclinical cardiopulmonary coursework or clinical electives.

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1.9 Heat-Related Illnesses

The relationship between heat-related illness and climate change is not a topic covered in either preclinical coursework or clinical electives.

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1.10 Environmental Determinants of Health

The disproportionate impact of environmental toxins and climate change on vulnerable populations is not a topic covered in preclinical coursework or clinical electives. Dr. Jameton, who led the ECM lecture related to climate change, says that, while justice may have been mentioned, it was not a primary focus of his discussion. This discussion mainly focussed on addressing climate change on an interpersonal level with patients.

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1.11 How to Advocate for Sustainable Practices

Ways to advocate for and implement sustainable best practices in health care is not a topic covered in either preclinical coursework or clinical electives.

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1.12 Area-Specific Environmental Threats

The school curriculum does not address environmental threats relevant to the university's surrounding community.

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1.13 Graduate-Level Planetary Health Courses

Medical students at the University of Minnesota can enroll in graduate or non-medical undergraduate courses for free (may choose one course as long as it does not overlap with medical school schedule). One such course is PUBH 6780 Climate Change and Health: Science, Policy, and Advocacy. This is an interprofessional course aimed at giving students the tools they need to lead climate movements. However, the feasibility of completing this course during year 3 and 4 curriculum is questionable, given

that it takes place on Tuesdays and Thursdays from 3:35 to 5:00 PM during the spring semester, which would likely be difficult to arrange without interfering with core or elective clerkships. There is also the course PUBH 6154 Climate Change and Global Health, where students learn how to use climate models to predict global health outcomes, but this course is also offered during the week and there would be similar obstacles to enrollment. Thus, the criteria for the metric is technically met, with a practical caveat that will need to be addressed going forward. MS1s and MS2s would likely be able to complete these courses if occasional excused absences were provided for required medical school sessions.

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1.14 Patient Encounters

Last year, MS1s received a lecture as part of ECM where Dr. Andrew Jameton discussed the ethical imperative to discuss climate change and environmental issues with patients in a clinical setting. The current status/content of this lecture for this year is not yet known.

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1.15 Environmental History

Taking environmental and exposure history is a topic addressed in the required preclinical course Essentials of Clinical Medicine (ECM), and is also a focus of the elective INMD 7523 Occupational & Environmental Medicine.

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1.16 Faculty Incentives

The medical school does not currently offer incentives to faculty/departments to develop new planetary health courses or incorporate planetary health into existing courses.

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Interdisciplinary Research in Health and Environment

Section Overview: This section evaluates the quality and quantity of interdisciplinary research in health and environment at the medical school.

Metric	Points	Description
2.1 Does your institution have a planetary health website, or a website centralizing various campus resources related to health and the environment?	1	There is a website that centralizes various campus resources related to health and the environment.
	0	There is no website.
2.2 Has your institution hosted a conference on planetary health in the past 3 years?	1	Yes, the institution has hosted a conference on planetary health in the past three years.
	0	No, the institution has not hosted an interdisciplinary health conference in the past three years.
2.3 Are there researchers engaged in planetary health research at your institution?	3	Yes, there is a department, institute, or center devoted to planetary health.
	2	Yes, there are individual faculty members who are doing research on topics immersed in planetary health.
	1	Yes, there are individual faculty members who are doing research that is related to planetary health.
	0	No, there is no research on planetary health at this time.
2.4 Is there a dedicated department or institute for multidisciplinary environmental and planetary health research?	1	There is a dedicated department or institute.
	0	There is no dedicated department or institute.
2.5 Is there active recruitment of researchers who focus on planetary health issues?	1	There is active recruitment.
	0	No recruitment efforts are made.

2.6 Is there quantitatively and qualitatively meaningful research that has been authored or co-authored by researchers from your institution on planetary health issues?	2	Yes, researchers from my institution have produced a substantial body of impactful research related to planetary health.
	1	There has been some research related to planetary health generated by researchers from my institution, but it is lacking in quantity and/or quality.
	0	There are no studies authored or co-authored by university researchers on these issues.
2.7 Has your institution joined the Planetary Health Alliance and/or the Global Consortium on Climate and Health Education?	1	Yes, the institution has joined the Planetary Health Alliance and/or the Global Consortium on Climate and Health Education.
	0	No, the institution has not joined the Planetary Health Alliance or the Global Consortium on Climate and Health Education.
Section Total (out of 10)	6	

Score Explanations

2.1 Planetary Health Website

There is no centralized campus resource related to health and the environment. The Center for Global Health and Social Responsibility has a web page titled “[Climate Change and Health](#)”. This webpage references a set of slides developed by UMN Climate Champions that cover various topics relating climate change and environmental exposures to health. The slides are meant to be incorporated into existing health curricula lectures where relevant. While a very valuable resource, this page does not amount to a planetary health website or constitute a compilation of “various campus resources related to health and the environment”.

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2.2 Planetary Health Conference

Code Blue For Patient Earth is a biannual, day-long conference that is primarily organized and funded by Health Professionals for a Healthy Climate, a community professional organization. The UMN is one of many sponsors for this event and has only hosted the conference once. Thus, while Code Blue is definitely an interdisciplinary conference addressing planetary health, UMN is not sufficiently involved to meet this metric.

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2.3 Planetary Health Individual Researchers

The Institute on the Environment (IonE) at the University of Minnesota is a multidisciplinary research center aimed at advancing sustainability initiatives within Minnesota. Several of the funded initiatives,

such as *Health and Environment in Africa* and *Food System Design for Health*, focus explicitly on enhancing human health through environmentalism. In addition, there is an ongoing effort to thread health discussions and considerations into all of the work done at IonE. This effort is led by Dr. Teddie Potter, who serves on the Leadership Council, and she believes that her voice is being heard loud and clear by IonE leadership. Thus, while IonE as an institution is not exclusively focused on the relationship between the environment and health, it is a core guiding principle in their work. There have also been multiple publications out of the School of Nursing relating to health and the environment from authors such as Dr. Teddie Potter and Dr. Shanda Demorest. Several faculty in the School of Public Health, such as Dr. Anthony Moulton and Dr. Kimberly Anderson, are also actively publishing in this area.

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2.4 Institute for Multidisciplinary Research on Health and the Environment

IonE is a multidisciplinary research center aimed at advancing sustainability initiatives within Minnesota.

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2.5 Recruitment of Planetary Health Researchers

According to Dr. Potter, there is active recruitment within IonE for researchers who focus on planetary health issues.

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2.6 Meaningful Research

While several faculty members are actively engaged in planetary health research, there does not appear to be a substantial body of work exploring the health impacts of environmental degradation and there is also no centralized collection of such research.

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2.7 Planetary Health Alliance

The School of Nursing has joined the Planetary Health Alliance. The School of Nursing, School of Public Health, and Center for Global Health and Social Responsibility have joined the Global Consortium on Climate and Health Education.

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Community Outreach and Advocacy in Environment and Health

Section Overview: This section evaluates the quality of medical school engagement in community programming and outreach and advocacy efforts associated with the environment and health.

Metric	Points	Description
3.1 How often does your institution offer community-facing courses or events regarding planetary health and the environment?	2	The institution offers such community-facing courses or events at least once every year.
	1	The institution offers such community-facing courses or events less than once per year.
	0	The institution does not offer such community-facing courses.
3.2 Does your institution interface with community organizations to promote planetary and environmental health?	1	Yes, the institution formally interfaces with one or more community organizations to promote planetary and environmental health.
	0	No, there is no such community partnership.
3.3 Does your institution have regular coverage of issues related to planetary health in its primary campus magazine?	2	Yes, there is an article related to planetary health in the majority of issues.
	1	In the past year, there has been at least one article related to planetary health.
	0	There has been no mention of planetary health in the last year in the campus magazine
3.4 Does the institution offer continuing medical education courses that address planetary health?	2	Yes, one or more in-person CME courses are offered.
	1	Yes, one or more online CME courses are offered.
	0	There are no courses.
3.5 Does your institution provide opportunities for medical student engagement in developing community resilience to	1	Yes, the institution has provided opportunities.
	0	No, the institution has not provided opportunities.

anthropogenic environmental impacts?		
3.6 Does institutional marketing (posters, billboards, etc) address climate change or the relationship between health and the environment?	1	Yes, institutional marketing addresses the intersections between climate and health.
	0	No, institutional marketing does not address these intersections.
3.7 Does your medical center have accessible educational materials for patients about environmental health exposures?	1	Yes, the medical center has accessible educational materials.
	0	No, the medical center does not have accessible educational materials.
3.8 Does your institution's endowment portfolio investments include fossil-fuel companies?	3	No, the institution is entirely divested from fossil fuels.
	2	The institution has partially divested from fossil-fuel companies.
	1	The institution has not divested from fossil-fuel companies, but faculty and/or students are conducting organized advocacy for divestment.
	0	Yes, the institution has investments with fossil-fuel companies and there have been no efforts to change that.
Section Total (out of 13)	3	

Score Explanations

3.1 Community-facing courses

The University of Minnesota does not offer community courses or events regarding planetary health.

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3.2 Community organizations

IonE partners with community organizations to promote environmental health in Minnesota through the *Resilient Communities Project*.

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3.3 Coverage in campus magazine

There have been several articles in the Minnesota Daily, the UMN campus news paper, covering planetary health initiatives. For example, “UMN students speak out about health implications of climate change”, by Jasmine Snow, and “UMN Medical School Announces First Steps to Address Climate Change”, by Emily Sizen.

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3.4 Continuing education courses

The medical school does not offer CME courses that address planetary health.

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3.5 Community outreach

While there are various independent learning opportunities that could potentially be used by students to engage with community partners on this issue, UMN does not provide formal opportunities for medical students to engage in developing community resilience to anthropogenic environmental impacts.

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3.6 Marketing

University of Minnesota marketing does not highlight the intersections of climate change and health.

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3.7 Patient educational materials

The medical center does not have accessible educational materials relating to environmental health. However, Dr. Surapaneni is leading the development of educational, animated videos to be made available to patients wishing for further information on various environmental hazards such as air pollution or heat-related illness. The soonest these materials will be available to patients would be sometime in the 2020-2021 school year.

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3.8 Investments

Student organizations, such as UMN Climate Strike and the Minnesota Student Association, are advocating for complete divestment from fossil-fuel companies. However, UMN currently has a large pool of money in the Russell 3000, an index fund that involves companies like Chevron and ExxonMobil.

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University Support for Student-Led Planetary Health Initiatives

Section Overview: This section evaluates the extent and quality of institutional support for student-led planetary health initiatives, such as funding, programming, etc.

Metric	Points	Description
4.1 Does your medical school offer a year-long fellowship for medical students to enact an initiative related to planetary health?	1	The medical school offers an explicit year-long fellowship for medical students to enact an initiative related to planetary health.
	0	There is no explicit practicum or year-long planetary health fellowship open to medical students.
4.2 Does your medical school have a website where medical students can learn about applying for funding for planetary health initiatives?	1	Yes, there is a website where medical students can learn about applying for funding for initiatives related to planetary health.
	0	No, there is no such website.
4.3 Does your institution have a website where medical students can find the contact information of mentors for planetary health initiatives?	2	The institution has a webpage that lists faculty involved in planetary health.
	1	The institution has a general website or directory that lists faculty and staff members' research and/or academic interests, but is not planetary health specific.
	0	There is no simple means of locating potential mentors for planetary health initiatives.
4.4 Does your medical school have funded, registered student groups dedicated towards fostering a culture of planetary health engagement and scholarship on campus, supported by faculty advisors?	2	Yes, there is a funded student organization with faculty support at my medical school dedicated to planetary health or sustainability in healthcare.
	1	Yes, there is a student organization at my medical school dedicated to planetary health or sustainability in healthcare but it lacks faculty support and/or funding.
	0	No, there is not a funded student organization at my institution dedicated to planetary health or sustainability in healthcare.

4.5 In the past year, has the institution had one or more co-curricular planetary health programs or initiatives in the following categories? (1 point each)	1	Projects where students are able to gain experience in organic agriculture and sustainable food systems, such as gardens, farms, community supported agriculture (CSA), fishery programs, or urban agriculture projects.
	1	Conferences, speaker series, symposia or similar events related to planetary health that have students as the intended audience.
	0	Cultural arts events, installations or performances related to planetary health that have students as the intended audience.
	1	Wilderness or outdoors programs (e.g., that organize hiking, backpacking, kayaking, or other outings for students) that follow Leave No Trace principles.
Section Total (out of 10)	8	

Score Explanations

4.1 Fellowship opportunity

The medical school does not offer a year-long fellowship for medical students to enact a planetary health initiative.

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4.2 Funding application website

In the Fall of 2019, Dean Tolar announced \$100,000 of funding available in the form of ‘Climate Change Grants’. This funding is meant to support interdisciplinary teams on projects aimed at reducing medical waste. There is a website describing the purpose of this funding with information about how to apply for the grant. However, going forward, there would ideally be a web page that lists multiple funding opportunities for planetary health initiatives for medical students. These would not necessarily be new grants, but existing grants within UMN that could be used to fund planetary health initiatives.

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4.3 Mentor contact information

The Center for Global Health and Social Responsibility has a page on their website titled “Climate Change and Health”. This page lists the contact information for “Climate Champions”, who are faculty within various health professional schools active in planetary health. The Climate Champions are available to serve as mentors for students within respective schools wanting to engage in planetary health initiatives.

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4.4 Registered student group

Health Students for a Healthy Climate (HSHC) is an interdisciplinary student group aimed at advancing sustainability initiatives within the health professional schools. This involves both spreading awareness about the intersection between the environment and human health as well as the importance of reducing the environmental impact of healthcare institutions. The group receives annual seed money through the Center for Health Interprofessional Programs (CHIP), and is supported by a faculty mentor, Dr. Laalitha Surapenini.

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4.5 Miscellaneous programs and initiatives

- **Garden:** Cornercopia is a student-run organic farm that gives students the opportunity to get hands-on experience in sustainable agriculture. Anyone, including students and community members, can volunteer at the farm, and there are also courses and research opportunities available.
- **Conferences, speaker series, symposia, or similar events:** Code Blue is a conference centered around climate change and healthcare, and students are encouraged to attend, although students are not the intended audience. There are several student-facing events centering around planetary health each year, either hosted by HSHC, the School of Nursing, or the Center for Global Health and Social Responsibility.
- **Cultural arts events, installations, or performances:** In the past year, there have not been any cultural events, installations, or performances related to planetary health.
- **Wilderness or outdoor programs:** The Outdoors Club is a student organization that provides opportunities for all UMN students to engage in outdoor activities while following Leave No Trace principles and engaging members in discussions of environmental ethics.

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Grading

Section Overview

This section focuses on the grading of the report card. The institution received a grade for each of the individual sections as well as an overall institutional grade. Section point totals were tallied, divided by the total points available for the section, and converted to a percentage. The overall institutional grade is an average of the section grades. 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	Grade
Planetary Health Curriculum	7 / 28 = 25%	D-
Interdisciplinary Research in Health and Environment	6 / 10 = 60%	B-
Community Outreach and Advocacy in Environment and Health	3 / 13 = 23%	D-
University Support for Student-led Planetary Health Initiatives	8 / 10 = 80%	A-
Institutional Grade	Average of four scores above = 48%	C