

Planetary Health Report Card:

University of Pennsylvania Perelman School of Medicine

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We thank the Perelman School of Medicine administrators – Dr. Suzi Rose, Dr. Dennis Dlugos, Dr. Nadia Bennett, Dr. Horace DeLisser, Anna Delaney, & Rosalyn Schorr – for their help in compiling this information.

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	2	The metric is met by the core curriculum.
	1	The metric is met by elective coursework.

(e.g. air pollution, pesticides) on pregnancy?	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,	2	The metric is met by the core curriculum.
	1	The metric is met by elective coursework.
	0	The metric is not met.

indigenous communities, children, and the elderly?		
1.11 Does your medical school curriculum identify ways to advocate for and implement sustainable best practices in health care? (for example, avoiding unnecessary OR waste)	2	The metric is met by the core curriculum
	1	The metric is met by elective coursework.
	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	1	Yes, the curriculum includes strategies for taking an environmental history.

introduce strategies for taking an environmental history or exposure 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 faculty/departments to develop new planetary health courses and/or incorporate planetary health into existing courses?	1	Yes, the medical school has an incentive program.
	0	No, the medical school does not have an incentive program.
Section Total (out of 28)	19/28	

Score explanations:

1.1 Elective Courses

The Perelman School of Medicine includes in the medical school tuition up to three courses from other programs in the university, which may be taken as electives. These include courses that fall under the domain of planetary health, such as: “Environmental and Occupational Health” (public health course); “Air Pollution: Sources & Effects in Urban Environments” (environmental studies course); and “Community Based Environmental Health” (environmental studies course).

1.2 Infectious Disease

The infectious disease course in the preclinical “Module 2” block includes a discussion of changing patterns of Lyme disease attributable to changing environmental conditions.

1.3 Diet and Sustainability

This is not a component of the medical school’s nutrition lectures.

1.4 Mental Health

This is not a component of the medical school’s lectures around mental health issues.

1.5 Environmental Exposures in Pregnancy

The reproductive systems course in the preclinical “Module 2” block includes a discussion of environmental exposures on pregnancy outcomes.

1.6 Endocrine Disrupting Chemicals

The impact of endocrine disrupting chemicals is discussed in pharmacology lectures in the standard pre-clinical coursework.

1.7 Food Security

The medical school curriculum does not directly address the relationships between individual patient food security, ecosystem health, and climate change, either in its core curriculum or in elective courses.

1.8 Air Pollution

The respiratory system course in the preclinical “Module 2” block includes a discussion of air pollutants and respiratory health outcomes.

1.9 Heat-Related Illnesses

A formal request was made to the pre-clinical course directors to make explicit the connection between climate change and heat-related illness in relevant lectures (e.g. renal, pulmonology, and cardiology). These changes were formally voted in as a committed curricular changes for the 2020-2021 academic year in June 2020. Pre-clinical Module Leaders (course directors) voted by email (with one abstention due to clinical duties) to approve that the PSOM curriculum would enhance planetary health content by “discussing heat-related illness.”

1.10 Environmental Determinants of Health

This change was formally voted in as a committed curricular change for the 2020-2021 academic year in June 2020. Pre-clinical Module Leaders (course directors) voted by email (with one abstention due to clinical duties) to approve that the PSOM curriculum would enhance planetary health content by “evaluating the impact of environmental toxins and climate change on vulnerable populations.” This ensures that it is an element incorporated in the pre-clinical curriculum map.

1.11 How to Advocate for Sustainable Practices

The topic of sustainability, reusability, and waste produced by the healthcare system will be a newly-integrated topic in the curriculum across all four years. Prompted by discussions around personal protective equipment (PPE) in the context of pandemics, all medical students will receive a training module prior to entering the hospital or campus environment around proper PPE usage; this training will include a discussion of the negative impacts of disposable medical waste. This change was codified as a change for the 2020-2021, as pre-clinical Module Leaders (course directors) voted by email (with one abstention due to clinical duties) to approve that the PSOM curriculum would enhance planetary health content by “identifying ways to advocate for and implement sustainable best practices in health care (avoiding waste).”

1.12 Area-Specific Environmental Threats

The medical school offered an optional symposium lecture for students following the June 2019 explosion of the Philadelphia Energy Solutions Oil Refinery, discussing health impacts and implications for residents of the city.

1.13 Graduate-Level (or Undergraduate-Level) Planetary Health Courses

The Perelman School of Medicine includes in the medical school tuition up to three courses from other programs in the university, which may be taken as electives. These include courses that fall under the domain of planetary health, such as: “Environmental and Occupational Health” (public health course); “Air Pollution: Sources & Effects in Urban Environments” (environmental studies course); and “Community Based Environmental Health” (environmental studies course).

1.14 Patient Encounters

The medical school curriculum does not introduce strategies to have conversations with patients about the health effects of climate change in training for patient encounters.

1.15 Environmental History

The “Introduction to Clinical Medicine (ICM)” course for second-year medical students will include content on taking an environmental history, per new slides created by MS2 students and confirmed by Dr. Anita Lee.

1.16 Faculty Incentives

There are no incentive programs, financial or otherwise, to encourage faculty to incorporate themes of planetary health and the intersection of climate change and medicine into the curriculum.

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)	7/10	

Score Explanations

2.1 Planetary Health Website

There is a website through the University of Pennsylvania's [Office of Sustainability](#) that collates initiatives and student groups at various graduate schools, but there is no central database focused on planetary health and all resources available to medical students (e.g. research, events, centers, funding, courses, etc.) related to human health & climate change/the environment. The Center of Excellence in Environmental Toxicology ([CEET](#)) website is a separate resource that focuses on environmental exposure research at Penn and has [publicized events](#) on planetary health-related topics like environmental justice.

2.2 Planetary Health Conference

PennVet hosted a weeklong multi-school One Health conference/symposium in 2018 and 2019, to which medical students received multiple direct invitations. Some portions of the conference were also hosted at locations on the medical school campus. The concept of One Health describes "the critical links between

the health of people, animals, and the environment,” which relates to planetary health. More information on the 2019 event can be found [here](#).

2.3 Planetary Health Individual Researchers

There are researchers at the University of Pennsylvania affiliated with the medical school who have published papers on planetary health themes. A portion of these researchers have planetary health as their stated primary academic focus, such as Dr. Marilyn Howarth, earning this category a 2. Some of this research is highlighted below. More can be found on the [Perelman CEET website](#) (as described in sections 2.6 and 4.3).

Examples of research produced at Penn:

- Dr. Marilyn Howarth (environmental & occupational health) has studied the environmental justice and health implications of the fossil fuel industry, as well as other public health implications of anthropogenic environmental toxicants.

Ex: Jemielita T, Gerton GL, Neidell M, ...**Howarth M**,... Elferink C. Unconventional Gas and Oil Drilling Is Associated with Increased Hospital Utilization Rates [published correction appears in *PLoS One*. 2015;10(8):e0137371]. *PLoS One*. 2015;10(7):e0131093. Published 2015 Jul 15. doi:10.1371/journal.pone.0131093

- Dr. Misha Rosenbach (dermatology) has researched and presented on the impact of climate change on skin disease in North America. He has also published around the importance of the link between climate change and health.

Ex: Kaffenberger BH, Shetlar D, Norton SA, **Rosenbach M**. The effect of climate change on skin disease in North America. *J Am Acad Dermatol*. 2017;76(1):140–147. doi:10.1016/j.jaad.2016.08.014

- Dr. Sean Hennessy (epidemiology) has researched climate-drug interactions.

Ex: Nam YH, Bilker WB, Leonard CE, Bell ML, Alexander LM, **Hennessy S**. Effect of statins on the association between high temperature and all-cause mortality in a socioeconomically disadvantaged population: a cohort study [published correction appears in *Sci Rep*. 2019 Jul 24;9(1):11010]. *Sci Rep*. 2019;9(1):4685. Published 2019 Mar 18. doi:10.1038/s41598-019-41109-0

- Dr. Gregory Tasian (nephrology) has researched the impact of changing climate on risk of kidney stone development.

Ex: **Tasian GE**, Pulido JE, Gasparrini A, et al. Daily mean temperature and clinical kidney stone presentation in five U.S. metropolitan areas: a time-series analysis. *Environ Health Perspect*. 2014;122(10):1081–1087. doi:10.1289/ehp.1307703

- Dr. Eugenia South (emergency medicine) has studied the community health impacts of urban greening.

Ex: **South EC**, Hohl BC, Kondo MC, MacDonald JM, Branas CC. Effect of Greening Vacant Land on Mental Health of Community-Dwelling Adults: A Cluster Randomized Trial [published correction appears in *JAMA Netw Open*. 2018 Aug 3;1(4):e182583]. *JAMA Netw Open*. 2018;1(3):e180298. Published 2018 Jul 6. doi:10.1001/jamanetworkopen.2018.0298

2.4 Institute for Multidisciplinary Research on Health and the Environment*

*(*Note, this cannot just be an Environmental Science Department – must be directly related to human health.)*

The Perelman School of Medicine houses the Center of Excellence in Environmental Toxicology ([CEET](#)), which is a valuable multidisciplinary resource for examining environmental health risks and exposures through the lens of environmental toxicology. However, its mission and research activities do not completely fulfill the definition of “planetary health.” The CEET’s mission is “to elucidate the mechanistic links between environmental exposures and human disease and translate its findings into action to improve the health of vulnerable individuals, and local, national and global communities.” The [definition of planetary health](#) is “a field focused on characterizing the human health impacts of human-caused disruptions of Earth’s natural systems” and “on understanding and addressing global environmental change and its health impacts.” Therefore, the primary piece missing is research around the population and individual health impacts of climate change, beyond toxicology (i.e. anthropogenic global change to Earth’s natural systems).

Other centers at Penn with room to expand to encompass planetary health are the Wharton Climate Risk Center; Water Center at Penn; Center for Global Health; Institute for Environmental Medicine; and Center for Public Health Initiatives.

2.5 Recruitment of Planetary Health Researchers

During the 2019-2020 academic year, the University of Pennsylvania released an announcement regarding the establishment of the [Environmental Innovations Initiative \(EII\)](#). The EII has as one of its stated goals to “recruit outstanding faculty members whose new perspectives advance the University’s work across such areas as climate change, sustainability, and environmental justice.”

2.6 Meaningful research*

*(*Intentionally vague because threshold for meaningful # of publications varies based upon precedent of how heavily research is prioritized at an institution.)*

Although the CEET as a center did not receive points for encompassing the full theme of planetary health, it houses individual researchers who have produced work on topics that fall under the umbrella of planetary health (e.g. air pollution and lung health; asthma; environmental exposures and cancer). This constitutes a significant body of work, as can be seen on the [CEET publications](#) site. Beyond the CEET, other researchers affiliated with the medical school have produced rigorous work viewed by a wide audience. Please see section 2.3 for further examples.

2.7 Planetary Health Alliance

The Perelman School of Medicine is a member of the [Global Consortium of Climate and Health Education](#). It is not a member of the [Planetary Health Alliance](#).

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 anthropogenic environmental impacts?	1	Yes, the institution has provided opportunities.
	0	No, the institution has not provided opportunities.
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)	10/13	

Score Explanations

3.1 Community-facing courses

There are no free community-facing courses regarding climate change and the environment available at the University of Pennsylvania. However, there are a variety of events hosted by the University of Pennsylvania Office of Sustainability. A list of events can be found [here](#).

3.2 Community organizations

Penn Medicine does formally interface with one or more community organizations to promote planetary and environmental health through the Bridging the Gaps program. Students can partake in a Community Health Internship with community partners. Medical students can work with Sankofa Community Farm at Bartram's Garden, working with adolescents on the farm to increase knowledge/access to nutritious food. Students can also work with UC Green, which empowers environmental stewardship in University City and its surrounding communities. In addition, students may work with a community partner of their choosing that fits the guidelines for Bridging the Gaps, including groups focused on environmental/planetary health. More information about Bridging the Gaps can be found [here](#).

3.3 Coverage in campus magazine

Although not enough to qualify as “in the majority of issues,” there have been articles published in Penn Medicine News around planetary health themes, such as [this 2019 piece](#) about climate change & the allergy season and [this 2019 piece](#) about the relationship between connecting with nature & a desire to foster health. The broader university magazine, Penn Today, also publishes pieces around climate change, some of which draw a relationship between climate change and health, [collated here](#).

3.4 Continuing education courses

While there are not CME courses explicitly designated for “planetary health,” there are CME courses that address planetary health themes, earning this category full points. Environmental & Occupational Medicine [Grand Rounds](#) and [Journal Club](#) both count for CME credit and address themes of planetary health. [Medical Education Journal Club](#) also counts for CME credit, and a session in 2019 had as its paper a piece about including climate change in medical school curricula. Finally, there is an online CME offering titled [Social and Environmental Determinants of Sleep](#) which also addresses themes of environmental impacts on health.

3.5 Community outreach

Penn Med is currently collaborating with the [Netter Center and the Students for Environmental Equity \(SEE\) Fellows program](#) to address global environmental health and justice concerns in West Philadelphia. Penn Med students, in partnership with other undergraduate and graduate students, help K-12 students learn about environmental science, environmental health, environmental justice and sustainability. This program helps develop community resilience to climate change by bringing about real-world and youth-driven understanding, inquiry, and problem solving around planetary health. SEE Fellows contact info: abalfanz@sas.upenn.edu

3.6 Marketing

Penn Med does not currently publicize marketing that addresses climate change or the relationship between health and the environment. Posters or billboards around the medical center and online were unable to be identified.

3.7 Patient educational materials

The medical center provides educational materials for patients about environmental health exposures through the Center of Excellence in Environmental Toxicology ([CEET](#)). Patients are able to learn more about environmental health through pages such as “How polluted is my environment?” However, these resources can be difficult to find without prior knowledge of the CEET.

3.8 Investments

Penn’s endowment portfolio investments currently include fossil-fuel companies, but Penn does not hold and does not expect to hold going forward, any direct investment in companies focused on the production of thermal coal or bituminous (tar) sands. These efforts reflect partial divestment from fossil-fuel companies, leading to a score of 2.

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	2	Yes, there is a funded student organization with faculty support at my medical school dedicated to planetary health or sustainability in healthcare.

on campus, supported by faculty advisors?	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)	8/10	

Score Explanations

4.1 Fellowship opportunity

There does not exist at this point in time a year-long fellowship opportunity for medical students to enact a planetary health initiative. There are websites that advertise fellowship funding opportunities, but not those specific to planetary health. There is a Penn Undergraduate Sustainability Action Grant, but this is only available for undergraduate research.

4.2 Funding application website

The University of Pennsylvania Office of Sustainability has a [Green Fund Grant](#) to which students can apply to receive funding for sustainability initiatives. In 2020, the Perelman Medical Student Government announced the creation of its [Impact Fund](#), to which students can apply for a smaller “Jump Start Grant” or a “Big Deal Award.” If a student wanted to design a planetary health initiative, it could potentially be funded through one of these grants.

4.3 Mentor contact information

The Perelman School of Medicine Center of Excellence in Environmental Toxicity’s website offers an extensive list of faculty members (and their respective contact information) whose research relates to environmental impacts on health outcomes. These faculty are listed categorically, under [Air Pollution & Lung Health](#), [Environmental Exposures and Cancer](#), [Windows of Susceptibility](#), [Environmental Neuroscience](#), and [Community Engagement](#). This category received full points, but an area for improvement could be creating a webpage that encompasses every researcher that conducts work related to planetary health across all medical departments and the university.

4.4 Registered student group

There is a student group at the medical school called the Healthcare Sustainability Group dedicated to the themes of planetary health and sustainability in medicine. It received funding from the Medical Student Government fund for the 2019-2020 academic year and has a physician faculty advisor (Dr. Misha Rosenbach).

4.5 Miscellaneous programs and initiatives

- **Garden:**

- *Through Penn Med’s [Bridging the Gaps](#) program, students can participate in an urban community agriculture program in West Philadelphia to promote community health and wellness.*

- **Conferences, speaker series, symposia, or similar events:**

- *Dr. Farah Hussain is an Assistant Professor of Clinical Medicine who works as a hospitalist. She gave a presentation in February 2020 in collaboration with the medical school’s Gold Humanism Society introducing scientific data that supports the threat of climate change, how it affects our patients, and what healthcare providers can do to protect vulnerable communities.*
- *In February 2020, an MSI at Perelman gave a Penn X Talk for the school on the interconnectedness of climate and health and why it should matter to medical professionals on a*

patient-to-patient clinical basis. She designed and presented the talk with mentorship from Dr. Nadia Bennett, who advises the PennTalks competition program and is also a course director at Penn Med.

- *In September 2019, professors and students from across the university united in a series of 1.5 Minute Climate Lectures to raise awareness around the consequences of the climate crisis and to advocate for large-scale changes in the university community.*

- **Cultural arts events, installations, or performances specific to climate and health:**

- *This does not yet exist at Penn Med.*

- **Wilderness or outdoor programs:**

- *Penn Med leads an annual student-run backpacking trip for first year medical students that follows Leave No Trace principles. The event is supported by Medical Student Government funding.*

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 Perelman School of Medicine

The following table presents the individual section grades and overall institutional grade for the Perelman School of Medicine on this medical-school-specific planetary health report card.

Section	Raw Score	Grade
Planetary Health Curriculum	19 / 28 = 68%	B
Interdisciplinary Research in Health and Environment	7 / 10 = 70%	B
Community Outreach and Advocacy in Environment and Health	10 / 13 = 77%	B+
University Support for Student-led Planetary Health Initiatives	8 / 10 = 80%	A-
Institutional Grade	Average of four scores above = 44/61 = 72%	B

