



Planetary Health Report Card (Medicine): *Penn State University College of Medicine*



PennState
College of Medicine

2023-2024 Contributing Team:

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Summary of Findings

Overall	C
<u>Curriculum</u>	C -
<ul style="list-style-type: none"> • There are growing efforts to better introduce planetary health curriculum into the preclinical coursework, especially pertaining to organ systems topics. There is a great strength in how health systems has begun to integrate this material. Overall there is little integration throughout all years of the curriculum. • Recommendations: Penn State could integrate topics into organ system blocks and PBL cases, and utilize student efforts to help faculty get comfortable with material. There could also be better emphasis on ways to discuss climate within the clinical phases of the curriculum, including clerkship modules and electives. 	
<u>Interdisciplinary Research</u>	B+
<ul style="list-style-type: none"> • Penn State University has a strong Sustainability Institute that hosts several events and conducts research. There are a few standalone College of Medicine faculty members connected to this work and conducting research. • Recommendations: While numerous opportunities exist at the Penn State level as a whole, more effort should be done to emphasize this and research opportunities for medical students. The College of Medicine could plan for a symposium event and work to get more medical student research (MSR) projects focused on climate and health related topics available for students. 	
<u>Community Outreach and Advocacy</u>	D
<ul style="list-style-type: none"> • There are limited climate and planetary health focused community partnerships from the Penn State College of Medicine or Penn State Health. At the time of this report card, there are efforts being made to work some climate topics into the next cycle of the community health needs assessment. • Recommendations: The College of Medicine and Penn State health should work on developing community partnerships that emphasize planetary health and sustainability goals, through student groups, community health team members, schools, etc. Patient handouts and training opportunities on planetary health topics could be developed. 	
<u>Support for Student-Led Initiatives</u>	C
<ul style="list-style-type: none"> • There is strong support for the work of the student Environmental Health and Medicine group and willing faculty to help support research and other advocacy or project initiatives. There is an opportunity to better centralize available opportunities to make it easier for students to find. • Recommendations: It could be worth pursuing to see if through the College of Medicine Penn State University there could be ways to secure dedicated funding for sustainability research and initiative projects for students. Additionally, find ways to mobilize student group to host more events that impact larger student and campus audience across variety of planetary health topics. 	
<u>Campus Sustainability</u>	D
<ul style="list-style-type: none"> • The College of Medicine is connected physically to the main Milton S. Hershey Medical Center of Penn State Health. The facilities department with Penn State Health are active members of our sustainability council and continue to work at making improvements in terms of the infrastructure on campus. • Recommendations: There are many areas of improvement identified with campus sustainability. These could include initiatives to promote a composting option, create guidelines or make guidelines more accessible for sustainable procurement and event hosting, and pushing towards university wide divestment. 	

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 this year, 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 more than one elective whose primary focus is ESH/planetary health in the past year.
2	Yes, the medical school has offered one elective whose primary focus is ESH/planetary health in the past year.
1	The medical school does not have any electives whose primary focus is ESH/planetary health, but there are one or more electives that include a lecture on planetary health.
0	No, the medical school has not offered any electives on planetary health or electives that include ESH/planetary health topics in the past year.
<p><i>Score explanation: At Penn State College of Medicine, HSS745 is a 2 week elective offered to fourth year students focused on topics relate to climate and health including emphasis on health systems topics and applicability to local central Pennsylvania communities. Topics include climate science, environmental determinants of health, waste, health systems facilities, extreme heat, environmental justice, mental health, pharmacy, and several interactive case studies. Students are tasked to create a curriculum proposal to incorporate climate health topics into basic science, humanities, or health systems curriculum including learning objectives and a session guide.</i></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 in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.

Score explanation: Extreme heat is covered during the elective coursework in HSS 745 but is not currently covered in core lecture material.

1.3. Does your medical school curriculum address the impacts of extreme weather events on individual health and/or on healthcare systems?

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

Score explanation: Extreme weather events are discussed as examples throughout health systems science course lectures during the preclinical curriculum and are mentioned in "Occupational and Environmental Lung Disease" lecture during the respiratory block. Additionally, extreme weather is covered in numerous threads during the 4th year elective with special emphasis given to what extreme weather events (heat, flooding) have historically impacted the surrounding community.

1.4. Does your medical school curriculum address the impact of climate change on the changing patterns of infectious diseases?

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

Score explanation: The University Park Regional Campus covered the impact of climate on changing trends in diseases such as tuberculosis in first year (PS1) curriculum through the creation of learning objectives by the class from case studies. The connection between changing temperature, humidity, and precipitation playing a role in spreading the disease. This is covered briefly in elective coursework with mentions about changing global patterns of infectious disease.

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

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

Score explanation: Elective coursework highlights the role of air pollution and the respiratory preclinical block contains a lecture entitled Occupational and Environmental Lung Disease which emphasizes the role between asthma and other lung conditions with the environment and various exposures. The University Park Regional Campus covered the role of air pollution on increasing rates of asthma and discussed the other of environmental health on topics such as the hygiene hypothesis through students creating learning objectives based off of case studies for the first year class.

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

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

Score explanation: In the fourth year elective course, there was a session devoted to understanding heat illness and making heat action plans with patients. Heat and the health implications as a is not otherwise not covered in preclinical coursework.

1.7. Does your medical school curriculum address the mental health and neuropsychological effects of environmental degradation and climate change?

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

Score explanation: The elective contained an entire session devoted to the mental health impacts of climate change, but no objectives or lectures exist during the preclinical neuro and behavioral science block. The University Park Regional Campus covered the impact of climate change on mental health in rural communities as a part of our health systems and humanities discussion, but no formal learning objectives were created to focus on neuropsychological effects in the MS1 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 in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.

Score explanation: During the fourth year elective, many sessions understood the relationship between climate change and threatening resource availability, particularly in the local communities. In the climate smart pharmacy session, time was also spent discussing the impacts on the ecosystem from product disposal and manufacturing processes. While these themes may be covered in general in health systems classes during the preclinical years, there were no formal objectives created.

1.9. Does your medical school curriculum address the outsized impact of climate change on marginalized populations such as those with low SES, women, communities of color, Indigenous communities, children, homeless populations, and older adults?

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

Score explanation: During a dedicated environmental and social determinants of health session during health systems during the first year there is emphasis on the intersections of climate with the other stated social determinants of health. Students have previously worked on class projects that must consider the environment during health systems community health projects. This is also reinforced with subsequent discussions throughout the year during health systems and later on during each session of the fourth year elective. The M1 class at the University Park Regional Campus have discussed the intersection of rural vs. urban communities, SES, and communities of color with global issues such as climate change. We have discussed the role of climate change on food and water sources for communities as well as the role of pollutants in changing environmental health.

1.10. Does your medical school curriculum address the unequal regional health impacts of climate change globally?

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

Score explanation: This concept of regional variation and inequity at the global scale is mentioned in the context of health systems science lectures, including those that had case discussions around global health issues. There is little emphasis and no formal objectives on topics such as conflict, migration, and other global issues directly in the main curriculum. The University Park Regional Campus has discussed the unequal impacts of climate change on various regions within the US as well as globally through learning epidemiology of diseases and discussions during health systems and humanities curriculum.

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

1.11. Does your medical school curriculum address the reproductive health effects of industry-related environmental toxins (e.g. air pollution, pesticides)?	
3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.
<p><i>Score explanation: There were no lectures in the preclinical coursework that discussed reproductive toxins and the elective coursework did not contain any dedicated material on reproductive health in this year's most recent iteration.</i></p>	

1.12. Does your medical school curriculum address important human-caused environmental threats that are relevant to the university's surrounding community?	
3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.
<p><i>Score explanation: In the elective, in both the climate science overview session and environmental determinants of health session emphasized the particular history of environmental harm and damage in the surrounding central Pennsylvania communities, including disastrous events like the Three Mile Island incident as well as fracking, agricultural practices, and urban development. The University Park Regional Campus has discussed influences of urbanization and industrialization on environmental health as well as the impacts of environment pollutants such as insecticides, pesticides, and herbicides on rural landscapes.</i></p>	

1.13. To what extent does your medical school emphasize the importance of Indigenous knowledge and value systems as essential components of planetary health solutions?	
3	Indigenous knowledge and value systems are integrated throughout the medical school's planetary health education
2	Indigenous knowledge and value systems as essential components of planetary health solutions are included briefly in the core curriculum.
1	Indigenous knowledge and value systems as essential components of planetary health solutions are included in elective coursework.
0	This topic was not covered.

Score explanation: In elective coursework, the general principle that indigenous knowledge is essential for planetary health solutions is mentioned but without depth or representation from reading or hearing from indigenous voices or understanding the indigenous history of this region.

1.14. Does your medical school curriculum address the outsized impact of anthropogenic environmental toxins on marginalized populations such as those with low SES, women, communities of color, children, homeless populations, Indigenous populations, and older adults?

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

Score explanation: In health systems examples and within the elective coursework, there are environmental justice case examples that highlight the impact of practices like redlining and how exposure to toxins is placed disproportionately on vulnerable populations. The University Park Regional Campus MIs have discussed the impacts of socio-economic factors on exposure to toxins and pollutants resulting in higher predispositions for certain diseases.

Curriculum: Sustainability

1.15. Does your medical school curriculum address the environmental and health co-benefits of a plant-based diet?

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

Score explanation: During the cardiovascular course, various diets were introduced from a heart healthy perspective including those that are plant-based but without any formal discussion on the environmental impact as well. In the elective coursework, plant based diets were examined during one of the introductory lectures showing the impact on emissions made by switching with brief mention of the health benefits as well. Nutrition education as a whole is not particularly emphasized during the curriculum at this point.

1.16. Does your medical school curriculum address the carbon footprint of healthcare systems?

3	This topic was explored in depth by the core curriculum
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.

0	This topic was not covered.
<p><i>Score explanation: There is an entire session during the second year Health Systems course dedicated to understanding waste created by the healthcare system, the three scopes of emissions, and having interaction discussions on different clinical environments and procedures and the waste that is created. This is re-emphasized during general discussions in health systems during the second year which focuses on quality improvement and waste topics. The elective continues to build upon this by also including a lecture given by individuals in the facilities department to understand the impact and initiatives at our own institution.</i></p>	

1.17. Does your <u>medical school</u> curriculum cover these components of sustainable clinical practice in the <u>core</u> curriculum? (points for each)	
2	The health and environmental co-benefits of avoiding over-medicalisation, over-investigation and/or over-treatment
2	The environmental impact of pharmaceuticals and over-prescribing as a cause of climate health harm. Alternatively teaching on deprescribing where possible and its environmental and health co-benefits would fulfill this metric.
1	The health and environmental co-benefits of non-pharmaceutical management of conditions where appropriate such as exercise or yoga classes for type 2 diabetes; social group activities such as gardening for mental health conditions; active transport such as bicycle schemes. This is commonly known as social prescribing in the UK.
1	Environmental impact of surgical healthcare on planetary health and the climate crisis, and how can it be mitigated
1	The impact of anaesthetic gases on the healthcare carbon footprint and ways to reduce anesthesia environmental impacts, such as total intravenous anaesthesia or choosing less environmentally harmful anaesthetic gas options with reduced greenhouse gas emissions
1	The impact of inhalers on the healthcare carbon footprint and the environmental benefit of dry powdered inhalers over metered dose inhalers.
1	Waste production within healthcare clinics and strategies for reducing waste in clinical activities (e.g. single use items in the inpatient or outpatient setting)
<p><i>Score explanation: Health systems science covers extensive discussion on value based care including a dedicated several week focus on understanding ways to avoid over-prescription and overmedicalization. In the dedicated waste session, the history of anesthetic gas use and its impact and initiatives that have taken place at our institution are covered. There are several discussions in the waste class on the surgical impact and having group discussions on ways to minimize waste.</i></p>	

Curriculum: Clinical Applications

<p>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?</p>

2	Yes, there are strategies introduced for having conversations with patients about climate change in the core curriculum.
1	Yes, there are strategies introduced for having conversations with patients about climate change in elective coursework.
0	No, there are not strategies introduced for having conversations with patients about climate change
<p><i>Score explanation: During the fourth year elective on the environmental determinants session we discussed talking with patients about climate while taking the environmental history. We also discussed in the context of making heat action plans.</i></p>	

<p>1.19. In training for patient encounters, does your <u>medical school's</u> curriculum introduce strategies for taking an environmental history or exposure history?</p>	
2	Yes, the core curriculum includes strategies for taking an environmental history.
1	Only elective coursework includes strategies for taking an environmental history.
0	No, the curriculum does not include strategies for taking an environmental history.
<p><i>Score explanation: The environmental history is covered during the Foundations of Patient Centered Care course. There is also the Occupational and Environmental Lung Disease lecture that emphasizes the correlation between environmental exposures and particular lung diseases. While covered in the core curriculum, it could certainly be re-emphasized especially in areas at the transition from preclinical to clinical years, The University Park Regional Campus students are trained in taking full histories including asking about environmental exposures such as travel as well as home and work environments.</i></p>	

Curriculum: Administrative Support for Planetary Health

<p>1.20. Is your <u>medical school</u> currently in the process of implementing or improving Education for Sustainable Healthcare (ESH)/planetary health education?</p>	
4	Yes, the medical school is currently in the process of making major improvements to ESH/planetary health education.
2	Yes, the medical school is currently in the process of making minor improvements to ESH/planetary health education.
0	No, there are no improvements to planetary health education in progress.
<p><i>Score explanation: The support for integrating planetary health topics into the curriculum has been heavily student driven with growing support from administration. We have a climate working group composed of a few students and faculty who are working to brainstorm ways to better integrate topics into curriculum like PBL cases or lecture topics, recognizing hurdles with needing faculty to teach the topics as well. We are fortunate to be supported by Penn State University and have begun conversations to collaborate to find the best ways to be able to adopt material into the existing</i></p>	

curriculum. We have been fortunate to add and emphasize climate topics into several health systems sessions and have had the fourth year elective run for the past two years.

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

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

Score explanation: While there are some running threads throughout health systems science, most topics are introduced in a single lecture (e.g. Occupational and Environmental Lung Diseases) and there are not integrating discussions on planetary topics consistently throughout the curriculum and its different phases,

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

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

Score explanation: Curriculum integration of planetary health and sustainability has been driven by students with faculty support but no specifically identified point person to oversee integration efforts.

Section Total (35 out of 72)

35

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

Interdisciplinary Research

Section Overview: *This section evaluates the quality and quantity of interdisciplinary planetary health research at the medical school and broader institution. Interactions between health and the environment are complex and multifactorial. While climate change has been extensively studied from an environmental science perspective, planetary health is an emerging field. As leading health institutions with talented researchers and research resources, medical schools should fund research studying the health effects of climate change and anthropogenic environmental toxins. This obligation is particularly strong because the public and policymakers are more attentive to climate change when its implications for human health are emphasized.*

2.1. Are there researchers engaged in planetary health research and healthcare sustainability research at your <u>medical school</u>?	
3	Yes, there are faculty members at the medical school who have a primary research focus in planetary health or healthcare sustainability.
2	Yes, there are individual faculty members at the medical school who are conducting research related to planetary health or healthcare sustainability, but it is not their primary research focus.
1	There are planetary health and/or healthcare sustainability researchers at the institution , but none associated with the medical school.
0	No, there are no planetary health and/or healthcare sustainability researchers at the institution or medical school at this time.
<p><i>Score explanation: Penn State’s Institute for the Energy and Environment (IEE) is an interdisciplinary organization within the university that supports research aimed at developing solutions to environmental challenges. IEE is organized into five different research themes, one of which is Health and the Environment, which is focused on understanding and addressing the ways that human health is affected by the environment—which includes the impacts of climate change. The head of this theme is a critical care physician and professor at Penn State’s College of Medicine who also holds an MPH with a focus on preventative and occupational medicine. She is also a member of the faculty advisory committee for the Penn State Climate Consortium, and is currently on a research project evaluating air quality in the MidAtlantic region of the United States and how clean energy development may impact community level pollutants. A number of other professors with the medical school are also actively researching health and the environment.</i></p>	

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

0	There is no dedicated department or institute.
<p><i>Score explanation: Penn State has the Institute of Energy and the Environment (IEE), which is dedicated to solving the world's critical energy and environmental challenges and is comprised of over 70 faculty members and over 950 researchers across the university. Specific research areas within the institute include Climate and Ecosystem Change, Health and the Environment, Integrated Energy Systems, Urban Systems, and Water and Biogeochemical Cycles. IEE funds interdisciplinary projects and manages the Energy and Environmental Sustainability Laboratories.</i></p> <p><i>The recently established Penn State Climate Consortium is a collective of internal and external partners committed to identifying, creating, and implementing research-based solutions to climate change. The consortium hosts the annual Climate Solutions Symposium and runs the Climate Solutions Accelerator, which provides research teams with the resources they need to pursue climate solutions.</i></p> <p><i>Penn State's Social Science Research Institute (SSRI) recently launched a Climate, Society, and Health initiative to promote and provide seed funding to interdisciplinary projects focused on the intersection of climate and health.</i></p>	

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 <u>medical school</u>?	
3	Yes, there is a process in which community members impacted by climate and environmental injustice have decision-making power in the climate + environmental research agenda.
2	Yes, there is a process in which community members impacted by climate and environmental injustice advise the climate + environmental research agenda.
1	No , but there are current efforts to establish a process for community members to advise or make decisions on the research agenda.
0	There is no process, and no efforts to create such a process.
<p><i>Score explanation: The Penn State Clinical and Translational Science Institute (CTSI) facilitates partnership between researchers and community members; specifically, CTSI serves to “ensure communities have the capacity to participate as full partners in the research process, are consulted for their research priorities, respected, valued and rewarded for collaborative activities.” CTSI enables Penn State researchers to hold community engagement studios where they solicit feedback from local community members about their proposed projects, which helps drive the direction of their research. Additionally, CTSI hosts community-driven research days during which local organizations collaborate with researchers to discuss community needs, brainstorm ideas, and develop partnerships.</i></p>	

2.4. Does your <u>institution</u> have a planetary health website that centralizes ongoing and past research related to health and the environment?	
3	There is an easy-to-use, adequately comprehensive website that centralizes various campus resources related to health and the environment including all of the following: upcoming events, leaders in planetary health at your institution, and relevant funding opportunities.

2	There is a website that attempts to centralize various campus resources related to health and the environment, but it is hard-to-use, not updated, or not adequately comprehensive.
1	The institution has an Office of Sustainability website that includes some resources related to health and the environment.
0	There is no website.

Score explanation: Penn State’s Institute of Energy and the Environment (IEE) centralizes ongoing campus resources related to, among other research areas, health and the environment. The institute’s primate website is located [here](#) and news, research, and events related to health and the environment are cataloged [here](#).

Penn State has also established a climate consortium, which is a collection of faculty, researchers, and scientists developing research-based solutions to understand and mitigate the impacts of climate change. They host the Climate Solutions Symposium as well as the Climate Solutions Accelerator, which is a program aimed at facilitating interdisciplinary, climate-focused research at the university. Their website is located [here](#) and includes an explanation of the initiative, future events and funding opportunities, a directory of leadership and participating researchers, links to university-based resources, and ways to get involved.

Most of this occurs at the Penn State University level but there is not dedicated space specific to the College of Medicine location however this information is shared with College of Medicine through the partnership with the College of Medicine Sustainability Council and our ties with Penn State Sustainability.

2.5. Has your institution recently hosted a conference or symposium on topics related to planetary health?

4	Yes, the medical school has hosted at least one conference or symposium on topics related to planetary health in the past year.
3	Yes, the institution has hosted at least one conference or symposium on topics related to planetary health in the past year.
2	Yes, the institution has hosted a conference on topics related to planetary health in the past three years.
1	The institution has not hosted any conferences directly, but they have provided financial support for a local planetary health event.
0	No, the institution has not hosted a conference on topics related to planetary health in the past three years.

Score explanation: Penn State’s Climate Solutions Symposium was held on May 22-23, 2023, and included a special breakout session focused on improving health outcomes in a changing climate, as well as a poster session that featured presentations over retiring coal-fired power plants to improve air quality and the use of vegetated infrastructure to mitigate the urban heat island effect.

Penn State College of Medicine has not hosted a standalone event. Penn State’s Climate Consortium will host the 2024 Climate Solutions Symposium from May 14-15, 2024, which will include breakout sessions, a poster session, and keynote talks over their many themes, one of which is Climate Change & Health and Well-being.

2.6. Is your medical school a member of a national or international planetary health or ESH organization?

1	Yes, the medical school is a member of a national or international planetary health or ESH organization
0	No, the medical school is not a member of such an organization
<i>Score explanation: Penn State Health recently became a Practice Greenhealth member, but is technically a separate entity from Penn State College of Medicine</i>	

Section Total (13 out of 17)	13
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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 medical school partner with community organizations to promote planetary and environmental health?	
3	Yes, the medical school meaningfully partners with multiple community organizations to promote planetary and environmental health.
2	Yes, the medical school meaningfully partners with one community organization to promote planetary and environmental health.
1	The institution partners with community organizations, but the medical school is not part of that partnership.
0	No, there is no such meaningful community partnership.
<p><i>Score explanation: Penn State University partners with multiple meaningful community organizations through Sustainable Communities Collaborative (SCC) projects. Hundreds of these projects include collaborating with Keystone Water Resources, Castle Shannon Borough, Walnut Springs Park, and more. These projects are also displayed and presented at the Campus and Community Sustainability Expo, co-hosted by Penn State Sustainability and State College Borough. However, Penn State College of Medicine in Hershey, Pennsylvania is not actively taking part in these projects.</i></p>	

3.2. Does your medical school offer community-facing courses or events regarding planetary health?	
3	The medical school offers community-facing courses or events at least once every year.
2	The medical school offers courses or events open to the community at least once per year, but they are not primarily created for a community audience.
1	The institution has offered community-facing courses or events, but the medical school was not involved in planning those courses or events.
0	The institution/medical school have not offered such community-facing courses or events.
<p><i>Score explanation: Penn State University hosts an annual Pennsylvania Envirothon, a high school environmental education program, approached by SCC and COMM 473, to create a communications program and reach targeted communities to lead a discussion about sustainability. Penn State College of Medicine is not a part of this initiative.</i></p>	

3.3. Does your medical school have regular coverage of issues related to planetary health and/or sustainable healthcare in university update communications?

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

Score explanation: Penn State College of Medicine provides general Penn State University and focused College of Medicine communication updates about upcoming sustainability talks via email. These include open students & faculty invitations to join Brown Bag discussions about a sustainability-focused curriculum within the College of Medicine, virtual events of climate authors, and environmental-oriented career webinars. Some students who are also on the Sustainability Council list-serv will receive more frequent communication about opportunities.

3.4. Does the institution or main affiliated hospital trust engage in professional education activities targeting individuals post graduation with the aim of ensuring their knowledge and skills in planetary health and sustainable healthcare remain up to date during their professional career?

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

Score explanation: Penn State College of Medicine offers medical students an elective course: Health Systems Science Climate and Health. There are no CME or didactic opportunities for other trainees or practicing physicians.

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

2	Yes, the medical school or all affiliated hospitals have accessible educational materials for patients.
1	Some affiliated hospitals have accessible educational materials for patients.
0	No affiliated medical centres have accessible educational materials for patients.

Score explanation: Penn State Health Allergy and Immunology clinics, as well as Penn State Health Lancaster, offers accessible educational material for environmental health exposures that may affect their symptoms and daily living. These brochures, pamphlets, and educational materials often include

the impact of air quality, water quality, and environmental pollutants and pollen that can impact their health.

3.6. Does your medical school or its affiliated teaching hospitals have accessible educational materials for patients about the health impacts of climate change?

2	Yes, the medical school or all affiliated hospitals have accessible educational materials for patients.
1	Some affiliated hospitals have accessible educational materials for patients.
0	No affiliated hospitals have accessible educational materials for patients.
<i>Score explanation: Penn State Health and Penn State College of Medicine do not currently offer educational materials to patients about specific health impacts in relation to climate change.</i>	

Section Total (4 out of 14)

4

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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 medical school or institution <i>either</i> offers grants for students to enact sustainability initiatives/QI projects <i>or</i> sustainability QI projects are part of the core curriculum.
1	The medical school or institution encourages sustainability QI projects (to fulfill clerkship or longitudinal requirements) and offers resources to help students succeed in these projects, but there is no student funding available and there is no requirement to participate.
0	No, neither the medical school or the institution offer opportunities or support for sustainability initiatives or QI projects.

Score explanation: In the Translating Health Systems course taken by students as they transition from third to fourth year, students are required to work on a QI project based on their clinical experiences. There is no specific emphasis on sustainability on this, but students are tasked with a QI project related to their chosen specialty they will be applying in the coming cycle. Informally, students have brainstormed ideas regarding waste improvements with faculty connections made through the sustainability council.

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 institution has a specific research program or fellowship for students interested in doing planetary health/sustainable healthcare research.
1	There are research opportunities for students to perform research related to planetary health/sustainable healthcare, but these require student initiative to seek these out and carry them out in their spare time.
0	There are no opportunities for students to engage in planetary health/sustainable healthcare research.

Score explanation: There is no particular research fellowship or program. Select faculty have created Medical Student Research project ideas regarding sustainability that students may get involved in by reaching out to faculty directly.

4.3. Does the <u>medical school</u> have a webpage where medical students can find specific information related to planetary health and/or sustainable healthcare activities and mentors	
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within the medical school? For example, projects achieved, current initiatives underway at the medical school and/or contact of information of potential mentors.

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

Score explanation: The College of Medicine's Medical Student Research Page (MSR) lists available MSR projects to students, which can include some projects with a sustainability or planetary health focus and the faculty to connect with. This is not housed on a sustainability specific site and there is not a centralized place to go to for sustainability work on campus at the College of Medicine.

4.4. Does your medical school have registered student groups dedicated towards fostering a culture of planetary health engagement, scholarship, and advocacy on campus, supported by faculty advisors?

2	Yes, there is a student organization with faculty support at my medical school dedicated to planetary health or sustainability in healthcare.
1	Yes, there is a student organization at my medical school dedicated to planetary health or sustainability in healthcare but it lacks faculty support .
0	No, there is not a student organization at my institution dedicated to planetary health or sustainability in healthcare.

Score explanation: Penn State College of Medicine has a group Environmental Health and Medicine (EHM) which is an affiliate chapter of MS4SF. There is a faculty liaison and additional faculty support for the initiatives led by students. The group participates as members of the sustainability council and holds events such as brown bag discussions, and spreads messages of sustainability with students.

4.5. Is there a student liaison representing sustainability interests who serves on a medical school or institutional decision-making council to advocate for curriculum reform and/or sustainability best practices?

1	Yes, there is a student representative that serves on a medical school or institutional decision-making council/committee.
0	No, there is no such student representative.

Score explanation: All board members of the EHM student group serve as members of the Sustainability Council and the Council is open to all interested students, faculty, etc. The Sustainability Council works to develop a strategic plan and goals across the health system and college of medicine.

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)	
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)
<p><i>Score explanation: The EHM student group led an outdoor hiking event intended to gather interested students in Central Pennsylvania and have organized tree planting around the College of Medicine and Hospital campus. The student group and council have hosted yearly earth day events and other speaker panels discussing sustainability.</i></p>	

Section Total (8 out of 15)	8
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Are there additional student-led initiative resources offered at your medical school or institution not yet asked about that you would like to describe? If so, please do so below.

Campus Sustainability

Section Overview: *This section evaluates the support and engagement in sustainability initiatives by the medical school and/or institution. The healthcare industry is a major contributor to greenhouse gas emissions as well as pollution that harms local, regional, and global ecosystems. While healthcare is, by nature, a resource-intensive endeavor, the healthcare sector is well poised to lead the world to a more sustainable future. This will involve scrutinizing every aspect of how our systems operate, from where we source our energy, to how we build our infrastructure, to what companies we invest in. Our medical schools, clinics, and hospitals must set the standard for sustainable practices, and show other sectors what is possible when it comes to minimizing environmental impact.*

5.1. Does your <u>medical school</u> and/or <u>institution</u> have an Office of Sustainability?	
3	Yes, there is an Office of Sustainability with multiple full-time staff dedicated to campus sustainability. If the Office of Sustainability serves the entire campus, there is at least one designated staff member for sustainability at the hospital and/or medical school.
2	There is an Office of Sustainability with one or more full-time staff dedicated to campus sustainability, but no specific staff member in charge of medical school and/or hospital sustainability.
1	There are no salaried sustainability staff , but there is a sustainability task force or committee
0	There are no staff members or task force responsible for overseeing campus sustainability
<p><i>Score explanation: Penn State Sustainability is centered at the University Park location where Penn State University resides. There is not a specific medical school/health system representative for sustainability but members of our council are in strong contact with the team at Penn State Sustainability and actively working to find ways to collaborate.</i></p>	

5.2. How ambitious is your <u>institution/medical school</u> plan to reduce its own carbon footprint?	
5	The institution/medical school has a written and approved plan to achieve carbon neutrality by 2030
3	The institution/medical school has a written and approved plan to achieve carbon neutrality by 2040
1	The institution/medical school has a stated goal of carbon neutrality by 2040 but has not created a plan to reach that goal or the plan is inadequate
0	The institution/medical school does not meet any of the requirements listed above
<p><i>Score explanation: The Penn State Carbon Emissions Reduction Task Force set forth the goal of carbon neutrality and 100% emissions reduction by 2035. The College of Medicine campus does fall under this plan, but being associated with a health system presents unique challenges. There is not yet at this time a concrete plan set forth but the Facilities department in Hershey has been actively working on reductions.</i></p>	

5.3. Do buildings/infrastructure used by the medical school for teaching (not including the hospital) utilize renewable energy?

3	Yes medical school buildings are 100% powered by renewable energy
2	Medical school buildings source >80% of energy needs from off-site and/or on-site renewable energy.
1	Medical school buildings source >20% of energy needs from off-site and/or on-site renewable energy.
0	Medical school buildings source <20% of energy needs from off-site and/or on-site renewable energy.

Score explanation: Given that the College of Medicine Campus is in a building directly connected to the main Milton S. Hershey Medical Center, it is difficult to separate out from the hospital itself. The campus features a 7.5-megawatt combustion turbine, which generates 50 percent of the campus annual electrical power and gives the campus the ability to isolate part of the facility from the grid in the case of a major outage. The cogeneration plant, also known as combined heat and power, produces multiple sources of energy from the same system, rather than letting extra energy go to waste. It can be 50 to 70 percent more efficient than a typical power source. This system can produce approximately 7.9 MW of electricity onsite, and the accompanying chilled-water system and steam system satisfy around 80 percent of the cooling and heating load requirements of the campus.

5.4. Are sustainable building practices utilized for new and old buildings on the medical school campus, with design and construction of new buildings and remodeling of old buildings conforming to a published sustainability rating system or building code/guideline?

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

Score explanation: Penn State Health obtained PEER Platinum certification and the College of Medicine is primarily located in the building attached directly to the main hospital.

5.5. Has the medical school or institution implemented strategies to encourage and provide environmentally-friendly transportation options for students and reduce the environmental impact of commuting?

2	Yes, the medical school or institution has implemented strategies to encourage and provide environmentally-friendly transportation options such as safe active transport, public transport, or carpooling and these options are well-utilized by students. Alternatively, the campus location is not amenable to unsustainable forms of transportation by default.
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1	The medical school or institution has implemented some strategies to provide environmentally-friendly transportation options, but the options are unsatisfactorily accessible or advertised.
0	The medical school or institution has not implemented strategies to encourage and provide environmentally-friendly transportation options.
<p><i>Score explanation: There are bike paths and trails for immediately surrounding areas and some student housing that is directly accessible via walking. However, there is little to poor public transportation infrastructure in the area in general and clinical rotations become difficult to reach without a car for the many off-campus sites or rotations at affiliates >45 minutes away.</i></p>	

5.6. Does your <u>medical school</u> have an organics recycling program (compost) and a conventional recycling program (aluminum/paper/plastic/glass)?	
2	Yes, the medical school has both compost and recycling programs accessible to students and faculty.
1	The medical school has either recycling or compost programs accessible to students and faculty, but not both.
0	There is no compost or recycling program at the medical school.
<p><i>Score explanation: There is recycling in the college of medicine campus buildings with separate bins for trash and recycling. There are not composting options on campus or accessible nearby.</i></p>	

5.7. Does the <u>medical school</u> apply sustainability criteria when making decisions about the campus food and beverage selections (e.g. local sourcing, reduced meat, decreased plastic packaging)?	
3	Yes, the medical school has adequate sustainability requirements for food and beverages, including meat-free days or no red-meat, and is engaged in efforts to increase food and beverage sustainability.
2	There are sustainability guidelines for food and beverages, but they are insufficient or optional . The medical school is engaged in efforts to increase food and beverage sustainability.
1	There are sustainability guidelines for food and beverages, but they are insufficient or optional . The medical school is not engaged in efforts to increase food and beverage sustainability.
0	There are no sustainability guidelines for food and beverages.
<p><i>Score explanation: The hospital and college of medicine's food supplier, Sodexo, has resources on their website here about their corporate wide environmental sustainability policies. It has been hard to gather how well the school has focused on applying such criteria as listed above based on the hospital and college of medicine dining facilities and approved catering options for events where there is indeed a lot of waste.</i></p>	

5.8. Does the <u>medical school</u> or <u>institution</u> apply sustainability criteria when making decisions

about supply procurement?	
3	Yes, the medical school has adequate sustainability requirements for supply procurement and is engaged in efforts to increase sustainability of procurement.
2	There are sustainability guidelines for supply procurement, but they are insufficient or optional . The medical school is engaged in efforts to increase sustainability of procurement.
1	There are sustainability guidelines for supply procurement, but they are insufficient or optional . The medical school is not engaged in efforts to increase sustainability of procurement.
0	There are no sustainability guidelines for supply procurement.
<p><i>Score explanation: This information was not available at the time of completing this report card. It is possible that such guidelines exist but were not made available and are not required, but are instead suggested based on preferences.</i></p>	

5.9. Are there sustainability requirements or guidelines for events hosted at the <u>medical school</u> ?	
2	Every event hosted at the medical school must abide by sustainability criteria.
1	The medical school strongly recommends or incentivizes sustainability measures, but they are not required .
0	There are no sustainability guidelines for medical school events.
<p><i>Score explanation: There are no such requirements or available certification programs to award an event as "sustainable"</i></p>	

5.10. Does your <u>medical school</u> have programs and initiatives to assist with making lab spaces more environmentally sustainable?	
2	Yes, the medical school has programs and initiatives to assist with making lab spaces more environmentally sustainable.
1	There are guidelines on how to make lab spaces more environmentally sustainable, but not programs or initiatives.
0	There are no efforts at the medical school to make lab spaces more sustainable.
<p><i>Score explanation: The grad student association at the College of Medicine has been heavily involved in discussions on ways to best make sustainability of the lab spaces accessible and safe. There are no formal initiatives or programs yet, but students are actively working in this space.</i></p>	

5.11. Does your <u>institution's</u> endowment portfolio investments include fossil-fuel companies?	
4	The institution is entirely divested from fossil fuels and has made a commitment to reinvest divested funds into renewable energy companies or renewable energy campus initiatives.

3	The institution is entirely divested from fossil fuels.
2	The institution has partially divested from fossil fuel companies or has made a commitment to fully divest , but currently still has fossil fuel investments.
1	The institution has not divested from fossil-fuel companies, but faculty and/or students are conducting organized advocacy for divestment.
0	Yes, the institution has investments with fossil-fuel companies and there have been no efforts to change that.
<i>Score explanation: Based on current research, Penn State University has not divested but resolutions by student groups, mainly up at University Park at the main campus have advocated for divestment from fossil fuels.</i>	

Section Total (10 out of 32)	10
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Are there additional sustainability resources offered at your medical school or institution not yet asked about that you would like to describe? If so, please do so below.

Grading

Section Overview

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

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

**Within each grade bracket, a score in the top 5% (_5 to _9%), receives a “+”, and a score in the bottom 5% (_0- _4%) receives a “--”. For example, a percentage score of 78% would be a B+.*

Planetary Health Grades for the Penn State College of Medicine

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

Section	Raw Score %	Letter Grade
Planetary Health Curriculum (30%)	$(32/72) \times 100 = 44\%$	C-
Interdisciplinary Research (17.5%)	$(13/17) \times 100 = 76\%$	B+
Community Outreach and Advocacy (17.5%)	$(4/14) \times 100 = 29\%$	D
Support for Student-led Planetary Health Initiatives (17.5%)	$(8/15) \times 100 = 53\%$	C
Campus Sustainability (17.5%)	$(10/32) \times 100 = 31\%$	D
Institutional Grade	$(A \times 0.3 + B \times 0.175 + C \times 0.175 + D \times 0.175 + E \times 0.175) = 46\%$	C