



Planetary Health Report Card (Medicine): *Columbia Vagelos College of Physicians and Surgeons*



2023-2024 Contributing Team:

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Summary of Findings

Overall	C
<u>Curriculum</u>	C -
<ul style="list-style-type: none"> Integration of planetary health topics into the medical school core curriculum continues to expand. The sources of information are through lectures in the <i>Introduction to Global and Population Health</i> elective course, through one module in “Environmental Health” in the Internal Medicine section of the Public Health Commute, and through brief mentions in lecture slides. Case based learning slide decks that incorporate climate health have been created to be implemented in the upcoming year. Recommendations: The medical school should continue to expand planetary health topics in its curriculum. Areas of implementation may include Public Health Commute lecture slides, Foundations of Clinical Medicine course, The Body: In Health and Disease course, M&P week, and a longitudinal curricular thread dedicated to planetary health. 	
<u>Interdisciplinary Research</u>	B+
<ul style="list-style-type: none"> Columbia University has several strong interdisciplinary research efforts, including the Earth Institute and the Climate School. The Mailman School of Public Health is particularly strong in the area of environmental health research and is a tremendous resource. Recommendations: The medical school should create a resource that centralizes these environmental health research opportunities and encourage medical students' involvement during dedicated research periods. Also, community involvement in the environmental research conducted by the university should be prioritized. 	
<u>Community Outreach and Advocacy</u>	D
<ul style="list-style-type: none"> While there are many initiatives throughout Columbia University and at the Mailman School of Public Health, there is currently no infrastructure for medical students to get involved in many outreach and advocacy efforts.. Recommendations: The medical school should seek to develop stronger collaborations with community organizations and other schools and involve students in these efforts as a requirement given the immense environmental determinants in the Washington Heights community. 	
<u>Support for Student-Led Initiatives</u>	B -
<ul style="list-style-type: none"> Columbia University supports student groups dedicated to planetary health by emphasizing interprofessional education dedicated to climate change and its health impacts. Recommendations: VP&S could further support student-led initiatives by creating dedicated funding opportunities and/or fellowships for research and student-led sustainability initiatives, as well as facilitating connections between students and research mentors. 	
<u>Campus Sustainability</u>	C+
<ul style="list-style-type: none"> Columbia University has taken concrete steps towards sustainability, with particular strengths including transportation, renewable energy, and committing to LEED standards and to carbon neutrality. Recommendations: The medical school should develop a composting plan and declare a start date for its availability to students. Furthermore, recycling bins should be required at all school events, and student organizations should be incentivized to have zero waste events. Events with catering provided by Faculty House should also be incentivized to use the sustainable menu option. 	

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 last 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:</i> VP&S offers an elective entitled “Introduction to Global and Population Health,” which featured a lecture on “Climate Change and Public Health,” taught by Dr. Cecilia Sorensen. The elective consisted of weekly evening lectures on determinants of disease and policy making in global health. There is also an interprofessional elective focused on the effects of climate change in patient care settings titled “Interprofessional Perspectives on the Impact of Climate Change on Health and Health Care Delivery,” taught by Dr. Cecilia Sorensen and Dr. Kristie Hadley. Additionally, this past year, students helped launch an opt-in Public Health orientation course that incoming medical students completed before matriculation, and one of the modules is dedicated entirely to climate health.</p>	

Curriculum: Health Effects of Climate Change

1.2. Does your <u>medical school</u> curriculum address the relationship between extreme heat, health risks, and climate change?	
3	This topic was explored 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: Mention of heat-related illnesses associated with climate change was not identified in The Body: In Health and Disease (BHD) curriculum.

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: This topic is discussed in the internal medicine clerkship course public health commute with links to the *Harvard Chan This Week in Health* podcast series *Climate Change and Health*. Additional reading integrated into coursework includes the New York Times article *As Climate Changes, Southern States Will Suffer More Than Others*. In BHD, there was mention in the “Diarrhea” lecture that gastrointestinal health worsens in the developing world after extreme weather events.

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: This topic was covered over several slides in the lecture “Infectious Disorders - II: Microorganism-Specific Disorders” referencing the Lancet Commission on Health and Climate Change. Several slides in the “Introduction to Infectious Diseases” lecture discuss climate change as a catalyst for the alteration in distribution of microbes, vectors, and hosts.

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: This topic was discussed in several lectures, particularly as it relates to the global burden of lung disease, COPD, and asthma. Additionally, there is a Public Health Commute module

focused exclusively on climate change and lung health, which focuses on asthma. The lectures included “COPD”, “OLD”, “Asthma”, and a Foundations of Clinical Medicine (FCM) lecture in which environmental contribution to asthma was discussed.

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: Mention of cardiovascular-related illnesses associated with climate change was not identified in The Body: In Health and Disease (BHD) curriculum.

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: This topic was covered during the Introduction to Global and Population Health elective course.

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: This topic was covered during the Introduction to Global and Population Health elective course.

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: This topic was covered during the Introduction to Global and Population Health elective course. This topic is also discussed in the “Environmental Health” module of the Public Health Commute.

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: There was no mention of this topic in the core 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.

Score explanation: There was brief mention of the reproductive health effects of environmental exposures during the Neurology block, such as in Dr. Zeltser’s Neuroembryology lecture. The Flint water crisis was explored in the Foundations of Clinical Medicine Course in the third semester of the curriculum.

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:</i> In her lecture on Social Determinants of Health in the Foundations of Clinical Medicine course, Dr. Lovinsky-Desir described several factors affecting residents of New York City, particularly with the geographical relationship between poverty and illnesses such as asthma and quality of care. This topic was also briefly addressed by the “Environmental Health” module of the Public Health Commute, and in Dr. Fedyna’s BHD lecture titled “Asthma”.</p>	

1.13. To what extent does your <u>medical school</u> 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.
<p><i>Score explanation:</i> There was no mention of this topic identified in the core curriculum.</p>	

1.14. Does your <u>medical school</u> curriculum address the outsized impact of anthropogenic environmental toxins on marginalized populations such as those with low SES, women, communities of color, children, homeless populations, Indigenous populations, and older adults?	
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:</i> There have been several discussions of anthropogenic environmental toxins and their impact on marginalized communities. In the core curriculum, the environmental contribution to asthma is discussed in the Foundations of Clinical Medicine. Additionally, this topic is emphasized throughout the Introduction to Global and Population Health elective course, as well as the required “Environmental Health” module of the Public Health Commute.</p>	

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: No mention of the benefits of a plant-based diet in relation to sustainability and health was found. In the “Antihypertensive Therapy” lecture, vegetarian diets were mentioned as a means to improve cardiovascular health in patients with hypertension.

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.

Score explanation: There was no mention of the waste generated by the healthcare system in the core curriculum that was identified.

1.17. Does your medical school curriculum cover these components of sustainable clinical practice in the core 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 anaesthesia 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)
	<i>Score explanation:</i> In the resource stewardship seminar lecture for Foundations of Clinical Medicine, there is mention of the environmental impacts of over-prescribing. In the Public Health Commute module in the Pulmonology section of Body in Health and Disease, the module discusses the different carbon footprints of different inhaler options.

Curriculum: Clinical Applications

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?	
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
<i>Score explanation:</i> There are no strategies introduced for having conversations with patients about climate change. There are several sessions dedicated to effective communication with patients but none of them focus on environmental health or climate change	

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?	
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.
<i>Score explanation:</i> In the Pulmonology block of the preclinical curriculum, students are taught to ask about occupational exposures such as asbestos, silicone, and beryllium. In the Pediatrics clerkship in clinical year, students are taught to ask about lead exposure in the outpatient well child visits. Students are not taught to ask about environmental risk factors specific to certain zip codes (for example, patients affected by Hurricane Sandy may be impacted by mold after flooding, pediatric patients from the Bronx are more likely to have asthma from the levels of air pollution, etc). Students are taught to ask about travel history to assess for vector-borne diseases in Foundations of Clinical Medicine and Tutorials.	

Curriculum: Administrative Support for Planetary Health

1.20. Is your medical school currently in the process of implementing or improving Education for Sustainable Healthcare (ESH)/planetary health education?

4	Yes, the medical school is currently in the process of making 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.

Score explanation: Significant administration support from the Senior Associate Dean for Student Affairs, Vice Dean for Education, and Associate Dean for Curricular Affairs allows for student input to expand planetary health education into the core curriculum. Case based learning slide decks and Public Health Commute modules that incorporate climate health have been created to be implemented in the forthcoming curriculum redesign.

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: Planetary health topics are sparsely integrated throughout the first three years of medical school at Columbia VP&S through mention in Body in Health and Disease (BHD) lectures, elective coursework, and through the Public Health Commute modules in BHD, but much more needs to be done for the integration to feel sufficient or complete.

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: No specific faculty/staff member has been identified to oversee the curricular integration at this time.

Section Total (32 out of 72)

44%

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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:</i> There are a handful of faculty members at the medical school that focus on topics of environmental health, such as exposure to neurotoxicants, environmental epigenetics, and health disparities. The faculty members include Dr. Sorensen, Dr. Boehme, Dr. Lovinsky Desir, Dr. Margolis, Dr. Orjuela-Grimm. There is a guide of planetary health researchers at the school of public health that has been disseminated to students.</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:</i> There are several centers and departments which feature multidisciplinary research relating to the environment at Columbia University, including the Earth Institute, and the department of Environmental Health Sciences at the Mailman School of Health. The university has recently opened a Climate School to further expand multidisciplinary efforts.</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 medical school?

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.

Score explanation: There is no identified process or efforts known to create a pipeline where communities can give input or make decisions about research agendas at the medical school specifically.

2.4. Does your institution have a planetary health website that centralizes ongoing and past research related to health and the environment?

3	There is an 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: There are several websites that centralize resources related to the environment. For example, <https://climate.columbia.edu/> is a website centralizing the various environment-related schools and programs at Columbia University. <https://sustainable.columbia.edu/> collects resources for students such as environment-related clubs as well as the school's sustainability plan. However, neither of these resources focus explicitly on planetary health. The GCCHE website, hosted by the Columbia University Mailman School of Public Health, contains various resources that focus on the impact of the environment on health: <https://www.publichealth.columbia.edu/research/global-consortium-climate-and-health-education/resources>

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.
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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: While Columbia University hosts numerous events related to the environment, sustainability, or climate change, the number of events it hosts relating to planetary health is more limited and largely tied to the School of Public Health. The Mailman School of Public Health hosted a seminar series on Food, Public Health, and Social Justice open to the public, though most of the events were in 2017-2018, with only a few in 2019-2020 and no identified seminars since then. Once a year, the School of Public Health additionally hosts a Granville H. Sewell Distinguished Lecture, which features individuals who have made contributions to environmental health sciences. The NIEHS Center for Environmental Health in Northern Manhattan, also part of the School of Public Health, hosts a series of seminars and meetings. Within the new Columbia Climate School, a Student Climate Symposium was held in 2022 as well as a Sustainability Symposium in 2023. Also, the Global Consortium on Climate and Health Education hosts various virtual webinar series, collaborating with global institutions to tie climate to mental and physical health.

2.6. Is your <u>medical school</u> 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:</i> The medical school is a member of the Global Consortium on Climate and Health Education and has a chapter of Health Students for a Sustainable Future, previously known as Medical Students for a Sustainable Future.	

Section Total (13 out of 17)	76%
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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:</i> The university interfaces with WE ACT for Environmental Justice, Inc. through the Community Engagement Core at the School of Public Health's NIEHS center. However, no concrete ways to participate in environmental or planetary health organizations are currently available through the medical school to medical students.</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:</i> There are several public-facing events hosted by Columbia that focus on the environment that may occasionally feature lectures or talks on environmental health. These include Lamont-Doherty Earth Observatory public lecture series and open house, and the Lamont open house. While the institution does a good job offering community-facing events, there have been few such events hosted through the medical school.</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: Communications about planetary health are received by medical students through school wide newsletters, commonly updated on recycling programs, which are not regularly scheduled. Through sign-up, students are able to receive communication from the Global Consortium on Climate Health and Education, which are regularly scheduled.

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: No Columbia University-hosted CME courses on planetary health were identified when searched for using the following [interface](#).

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: Some affiliated medical centers have accessible online educational materials for patients about environmental health exposures (the health library [linked](#) through New York Presbyterian), but not about climate change.

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:</i> No affiliated hospitals were found to have accessible online resources about climate change.	

Section Total (4 out of 14)

29%

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Support for Student-Led Planetary Health Initiatives

Section Overview: This section evaluates institutional support for student-led planetary health initiatives, such as funding, fellowships, programming, and student groups. Planetary health is a young field and, as young people facing a future deeply shaped by climate change, students are often some of the first at an institution to engage with it. Institutions should provide support for students to engage in sustainability quality improvement (QI) initiatives, discover mentors in their area of interest, and receive funding for planetary health projects.

4.1. Does your <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: There seem to be no dedicated grants for sustainability initiatives, but there seem to be undedicated funds available (for example, funding was identified by Dean Mellman for a student's initiatives in 2019-2020 to acquire reusable utensils for events hosted at the medical school; and Office of Environmental Stewardship has worked with students on capstone projects). Furthermore, there is general funding available for humanitarian initiatives, like the Steven Miller Prize.

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 are many opportunities for medical students to perform planetary health research through the Consortium on Climate and Health Education. Furthermore, a list of research labs involved in climate research was sent to the medical students seeking summer internship. No specific, dedicated medical school funding is available for year-long environmental health research projects, but students are eligible to apply for Dean's Fellowship or external fellowships.

4.3. Does the medical school have a webpage where medical students can find specific

information related to planetary health and/or sustainable healthcare activities and mentors within the medical school? For example, projects achieved, current initiatives underway at the medical school and/or contact of information of potential mentors.

2	The 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: No dedicated webpage exists outside of those available from the School of Public Health resources and getting connected with faculty mentors through medical school student organizations like the Health Students for a Sustainable Future.

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: There are many registered student groups at the university. Specifically at the medical school, Food for Thought seeks to educate students about sustainable and healthy diets to integrate healthy eating habits into the practice of medicine. The Health Students for a Sustainable Future seeks to develop planetary health slides for the curriculum and collaborate with faculty members to facilitate an interprofessional workshop in climate health, which is led by faculty mentor and professor Dr. Cecilia Sorensen.

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: There is an Eco Representative on the student council who advocates for curricular implementation of planetary health topics into the curriculum, participates in the development of the

Planetary Health Report Card, and collaborates with the student body for campus sustainability initiatives.

4.6. 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	Panels, speaker series, or similar events related to planetary health that have students as an intended audience.
1	Events in which students learn directly from members of a local environmental justice community about the climate and environmental challenges they face, and how health professionals can partner with their community to address these exposures and impacts.
1	Cultural arts events, installations or performances related to planetary health that have students as an intended audience.
1	Local volunteer opportunities related to building community resilience to anthropogenic environmental impacts.
1	Wilderness or outdoors programs (e.g., that organize hiking, backpacking, kayaking, or other outings for students)

Score explanation:

1. There is an annual Interprofessional Education (IPE) day across Columbia health schools that includes a panel by climate doctors and environmental activists, targeted specifically towards medicine, nursing, dental, nutrition, physical therapy, and genetic counseling students.
2. VP&S students advertise and promote community-building events with WeAct, an environmental justice group located in northern Manhattan.
3. VP&S holds a variety of pre-orientation hiking and wilderness trips for first-year medical students under the student-led organization PSOOP.

Section Total (9 out of 15)

60%

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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:</i> There is an Environmental Stewardship team at the university, and a network of volunteers called the Sustainable Leaders Network that aid in the sustainability effort, including members at the medical school. At the medical school campus, Indrajeet Viswanathan in the Facilities Engineering department serves as the Director of Energy Management and Sustainability.</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:</i> There is a commitment in place to become carbon neutral by 2050. The university formalized non-investment in gas, oil, and coal companies. The new Plan 2030 uses “science-based interim emissions reduction targets” to reach carbon neutrality by 2050.</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: Columbia University campuses including the medical school campus claim to rely on 100% renewable energy (source) through a combination of retro-commissioning and the purchase of Renewable Energy Certificates (RECs).

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: The VEC is LEED gold certified as of 2018; and, as of 2007, Columbia University has committed to a minimum of LEED Silver certification for all new buildings and reconstruction projects.

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.
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.
<i>Score explanation:</i> The school offers a shuttle between campuses, and public transit is readily available.	

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.
<i>Score explanation:</i> There is a recycling program available to students. No compost services are readily available on the medical school campus, however, funding has been allocated for composting as of fall 2022.	

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.
<i>Score explanation:</i> The Faculty Club offers a student meal plan for medical students and other students on the medical campus. It has some commitments to sustainability listed on its <u>website</u> , including produce from local farms and coffee certified by the Rainforest Alliance, recycling cooking oil, eco-friendly disposable wares, and some efforts for catered events. <u>56% of food items</u> served on the Morningside Campus are from local sources. Food scraps are transported to <u>compost sites for use</u> on local urban farming and gardening projects. The medical student spending <u>guidelines</u> do not prioritize sustainability for food and beverage.	

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

Score explanation: No sustainable procurement guidelines were identified among the procurement policies on the Columbia University website. However, the 2017 sustainability plan appears to suggest that the Morningside campus (which does not include the medical school) has worked to optimize procurement sustainability (e.g. by reducing waste generation, for example by setting minimum order values with vendors, and partnering with specific vendors) and has made goals to reduce waste. From this source, it appears that guidelines for “socially responsible purchasing” at the medical center are still being developed.

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

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.

Score explanation: There is a sustainable menu available for events at Columbia. The event planning/catering website at the medical center suggests that events catered by the Faculty Club do take sustainability measures into consideration. However, there is no mention that every event must meet sustainability criteria or that student club spending for events must meet sustainability criteria, and no mention of sustainability in the University’s broader events policies.

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

2	Yes, the medical school has 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.

Score explanation: There are instructions for making a workspace more green as part of the Sustainable Leaders Network, but these are not specific to labs. Columbia partnered with Labs21 for one specific building that is not located at the medical school. There are resources for fume hood upgrades and medical waste recycling.

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.
<p><i>Score explanation:</i> In 2017, Columbia University divested from coal but not oil and gas companies; in January 2021, Columbia <u>announced</u> that it will no longer invest in publicly-traded oil and gas companies. However, the University did not commit to divesting from indirect holdings. Furthermore, the University may make exceptions for companies with credible plans for net-zero emissions by 2050.</p>	
Section Total (18 out of 32)	
56%	

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Grading

Section Overview

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

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

Planetary Health Grades for the Columbia University Vagelos College of Physicians & Surgeons

The following table presents the individual section grades and overall institutional grade for the Columbia University Vagelos College of Physicians & Surgeons 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%)	$(9/15) \times 100 = 60\%$	B
Campus Sustainability (17.5%)	$(18/32) \times 100 = 56\%$	C+
Institutional Grade	$(Ax0.3 + Bx0.175 + Cx0.175 + Dx0.175 + Ex0.175) = 52\%$	C