



Planetary Health Report Card: *Columbia University Vagelos College of Physician and Surgeons*



2021-2022 Contributing Team:

- Students: Alex Northrop*, Sonora Yun, Jonathan Bailey
- Faculty Mentors: Dr. Cecilia Sorensen
- *Primary Contact: Alex Northrop, ajn2157@cumc.columbia.edu

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 is limited, but expanding. The medical school has hired new faculty committed to climate health in the past year. Recommendations: VP&S 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; and The Body: In Health and Disease course. 	
<u>Interdisciplinary Research</u>	A
<ul style="list-style-type: none"> Columbia University has several strong interdisciplinary research efforts, including the Earth Institute and the new Climate School. The Mailman School of Public Health is particularly strong in the area of environmental health research and is a tremendous resource. The medical school should work to become more well integrated into the network of interdisciplinary resources and should make these resources more readily available to medical students. Recommendations: The medical school should create a resource that centralizes these opportunities and outlines the ways in which medical students could get involved. 	
<u>Community Outreach and Advocacy</u>	D-
<ul style="list-style-type: none"> While there are many initiatives throughout Columbia University, there is currently no infrastructure for medical students to get involved in most outreach and advocacy efforts. The medical school should work to strengthen connections across the university and make these initiatives more readily accessible and better publicized for medical students. Recommendations: The medical school should seek to develop stronger collaborations with community organizations and involve students in these efforts. 	
<u>Support for Student-Led Initiatives</u>	B
<ul style="list-style-type: none"> The administration is supportive of and enthusiastic about student efforts. Recent improvements include a centralized list for potential collaborators in planetary health and a new student chapter of Medical Students for a Sustainable Future. Recommendations: Dedicated student funding for environmental health funding would be an area for growth. 	
<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, commitment to building new buildings up to LEED standards, and committing to carbon neutrality. Recommendations: The medical school can make composting available on its campus. 	

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 schools' 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 “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.” 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.
- **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 (for example, undergraduate departments, 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.

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. Did your medical school 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>Score explanation: 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.</p>	

Curriculum: Health Effects of Climate Change

2. Does your medical school 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.

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 the coursework includes the New York Times article *As Climate Changes, Southern States Will Suffer More Than Others*, which specifies the health impacts of extreme heat.

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. Specifically, the lecture mentioned emerging infectious diseases such as Zika.

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 climate change and air pollution relate to the global burden of lung disease, COPD, and asthma. New additions to the curriculum include a Foundations of Clinical Medicine (FCM) lecture in which environmental contribution to asthma was discussed.	

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.	

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 in Dr. Kathleen Pike’s lecture “Global Burden of Disease – Mental Health”.	

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 explored extensively during the Introduction to Global and Population Health elective course in Dr. Frederica Perera’s lecture “Determinants of Disease – Environment, Air Pollution and Health”; furthermore, the Public Health Commute of the BHD core curriculum featured discussion of the water, sanitation, and hygiene (WASH) sector.	

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 in Dr. Neil Schluger’s lecture “Global Burden of Disease – The Shift in Mortality from Infectious to Non-Communicable Diseases”. Summer reading for incoming students includes <i>Fresh Fruit, Broken Bodies</i> by Seth Holmes.	

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 topic was covered during the Introduction to Global and Population Health elective course in the lecture “Climate Change and Public Health”. As noted above, required reading included <i>Fresh Fruit, Broken Bodies</i> by Seth Holmes, with accompanying Foundations of Clinical Medicine discussions in the core curriculum.	

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

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. There were also mentions of reproductive health effects of industry-related environmental toxins asbestos, benzene, and aflatoxin) in the Genetics block.

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.

Score explanation: In her lecture on Public Health and Health Promotion in the Foundations of Clinical Medicine course, Dr. Austin described several factors affecting residents of New York City, particularly with the geographical relationship between poverty and illnesses such as asthma and COVID-19. This topic was also addressed by the “Environmental Health” module of the Public Health Commute.

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

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: There have been several discussions of anthropogenic environmental toxins and their impact on marginalized communities. In the core curriculum, the environmental contribution to asthma and the Flint water crisis 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.

Curriculum: Sustainability

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 BHD curriculum. The only mention of diet and sustainability as relevant to health were references to the Dutch Hunger Winter and the nixtamalization of corn tortillas.

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.	

17. Does your medical school curriculum cover these components of sustainable clinical practice in the <u>core</u> curriculum? (1 point each)	
1	Waste production within the healthcare system and strategies for reducing waste in clinical activities, such as in the operating room
1	The impact of inhalers on the healthcare carbon footprint and the environmental benefit of dry powdered inhalers over metered dose inhalers.
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 anaesthetic gas options with reduced greenhouse gas emissions
1	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 for obesity. This is commonly known as social prescribing in the UK.
1	The health and environmental co-benefits of avoiding over-medicalisation, over-investigation and/or over-treatment
Score explanation: There was no mention of the above topics in the core curriculum identified.	

Curriculum: Clinical Applications

18. In training for patient encounters, does your medical school's curriculum introduce strategies to have conversations with patients about the health effects of climate change?	
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>Score explanation: 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.</p>	

19. In training for patient encounters, does your medical school’s curriculum introduce strategies for taking an environmental history or exposure history?	
2	Yes, the 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>Score explanation: 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).</p>	

Curriculum: Administrative Support for Planetary Health

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.
<p>Score explanation: Significant administration support from the Senior Associate Dean for Student Affairs, Vice Dean for Education, and Interim Associate Dean for Curricular Affairs allows for student input to expand planetary health education into the core curriculum. Furthermore, an interprofessional climate health module is being integrated into the curriculum.</p>	

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 integrated throughout the first three years of medical school at Columbia VP&S. These topics are integrated in various lectures, through elective coursework, and through the Public Health Commute modules in BHD and the Major Clinical Year (MCY).	

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 (33 out of 69)	C
-------------------------------------	----------

Back to Summary Page [here](#)

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.

1. Are there researchers engaged in planetary health research and healthcare sustainability research at your medical school?	
3	Yes, there are faculty members at the School of Medicine who have a primary research focus in planetary health or healthcare sustainability.
2	Yes, there are individual faculty members at the School of Medicine 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.
Score explanation: 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.	

2. Is there a dedicated department or institute for interdisciplinary planetary health research at your institution?	
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.

Score explanation: There are several centers for research relating to the environment at Columbia University, including the Earth Institute, which features multidisciplinary research including environmental health. This past year, the university launched the Climate School to further expand multidisciplinary efforts.

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: The Mailman School of Public Health has ongoing community partnerships with several community partners that are well established in the medically underserved and environmentally burdened areas of Northern Manhattan and South Bronx (including We Act for Environmental Justice, South Bronx Unite, and Little Sisters of the Assumption). These organizations are part of the school's Community Engagement Core (CEC) that aims to collaborate in the production of environmental health research that can be directly useful to the community. Furthermore, The Columbia Community Partnership for Health (CCPH) provides a space for research, meeting, and event spaces for Columbia University researchers and non-profit stakeholders in the community.

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>

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: 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 this year.

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
Score explanation: The medical school is a member of the Global Consortium on Climate and Health Education and has a chapter of Medical Students for a Sustainable Future.	

Section Total (16 out of 17)	A
-------------------------------------	----------

Back to summary page [here](#)

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.*

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>Score explanation: As stated above, the university interfaces with community partners through the Community Engagement Core at the School of Public Health's NIEHS center. However, these partnerships are not specific to the medical school.</p>	

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 medical school has not offered such community-facing courses or events.

Score explanation: 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 of Columbia University (LDEO) 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.

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 regularly receive communications about planetary health or sustainable healthcare.

Score explanation: Yes, recent communications updates include notification of the Columbia Student Climate Symposium and university-wide recycling programs; however, these communications are not regularly scheduled.

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](#).

5. Do hospitals affiliated with your medical school have accessible educational materials for patients about environmental health exposures?

2	Yes, all affiliated hospitals have accessible educational materials for patients.
1	Some affiliated hospitals have accessible educational materials for patients.
0	No affiliated medical centers 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.

6. Do hospitals affiliated with your medical school have accessible educational materials for patients about climate change and health impacts?

2	Yes, 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.

Score explanation: New York Presbyterian promotes “Meatless Mondays” on its [website](#) but does not have an identified dedicated page for educational materials.

Section Total (4 out of 14)	D-
------------------------------------	-----------

Back to summary page [here](#)

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.*

1. Does your institution offer support for medical students interested in enacting a sustainability initiative/QI project?	
2	Yes, the 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 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, the institution does not offer opportunities or support for sustainability initiatives or QI projects.
<p>Score explanation: There seem to be no dedicated grants for sustainability initiatives, but there are general funds available that students can choose to use to support sustainability projects (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 <u>projects</u>). Furthermore, there is general funding available for humanitarian initiatives, like the Steven Miller Prize.</p>	

2. Does your institution offer opportunities for medical students to do research related to planetary health and/or sustainable healthcare?	
3	The institution offers an explicit paid fellowship for medical students to do research related to planetary health and/or sustainable healthcare.
2	The institution offers paid research opportunities for students and planetary health/sustainable healthcare projects would be considered eligible.
1	There are unfunded research opportunities for students to perform research related to planetary health/sustainable healthcare.
0	There are no opportunities for students to receive funding for planetary health/sustainable healthcare research.

Score explanation: 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.

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 besides perhaps some of the School of Public Health resources, but you can readily get connected to relevant faculty mentors via word of mouth. Through the Medical Student for a Sustainable Future chapter, research mentors in planetary health are available.

4. Does your medical school have funded, 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 funded student organization with faculty support at my medical school dedicated to planetary health or sustainability in healthcare.
1	Yes, there is a student organization at my medical school dedicated to planetary health or sustainability in healthcare but it lacks faculty support and/or funding.
0	No, there is not a 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 Medical 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.

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.

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) that follow Leave No Trace principles.

Score explanation:

- Students are invited to participate in a community-supported agriculture group.
- There have been certain events with students invited to participate, such as a lecture on energy insecurity and environmental justice held in October 2020 or events hosted by the Food for Thought group at VP&S.

- A few cultural events have been hosted, including the Gather film screening held by the Food for Thought group, a 2019 themed exhibition on water from the Art School, and two video art exhibits hosted online.
- PSOOP is an outdoor orientation program for incoming medical students held in August of each year.

Section Total (11 out of 15)

B

Back to summary page [here](#)

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.

1. Does your medical school and/or institution 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
Score explanation: There is an Environmental Stewardship <u>team</u> at the university, and a network of volunteers called the <u>Sustainable Leaders Network</u> 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.	

2. How ambitious is your medical school/institution’s plan to reduce its own carbon footprint?	
4	The institution has a stated goal of carbon neutrality by 2030 or earlier and the medical school / institution has a well-defined and adequate plan in place to achieve this goal.
3	Yes, there is a stated carbon neutrality goal by at least 2040 and the medical school/institution has a well-defined and adequate plan in place to achieve this goal.
2	Yes, there is a stated carbon neutrality goal by at least 2040, but the medical school/institution has not created a plan to reach that goal or the plan is inadequate.
1	There is a CO2 emission reduction goal, but it is not one of carbon neutrality (by 2050).

0	There is no stated goal for reduction of CO2 emissions.
Score explanation: There is a <u>commitment</u> 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.	

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 (<u>source</u>) through a combination of retro-commissioning and the purchase of Renewable Energy Certificates (RECs).	

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 rating system or sustainable 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 <u>VEC</u> is LEED gold certified as of 2018; and, as of 2007, Columbia University has <u>committed</u> to a minimum of LEED Silver certification for all new buildings and reconstruction projects.	

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

2	Yes, the medical school 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 has implemented some strategies to provide environmentally-friendly transportation options, but the options are unsatisfactorily accessible or advertised.
0	The medical school has not implemented strategies to encourage and provide environmentally-friendly transportation options.

Score explanation: The school offers a shuttle between campuses and public transit is readily available, both of which are more accessible than more carbon-intensive transport options.

6. Does your medical school have an organics recycling program (compost) and a conventional recycling program (aluminum/paper/plastic/glass)?

2	Yes, the medical school has 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.

Score explanation: There is a recycling program available to students. No compost services are readily available on the medical school campus.

7. Does the medical school apply sustainability criteria when making decisions about the campus food and beverage selections?

3	Yes, the medical school has adequate sustainability requirements for food and beverages 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>Score explanation: 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 website, 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.</p>	

8. Does the medical school or associated institution 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>Score explanation: No sustainable <u>procurement guidelines</u> were identified among the procurement policies on the Columbia University website. However, the 2017 <u>sustainability plan</u> 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 <u>source</u>, it appears that guidelines for “socially responsible purchasing” at the medical center are still being developed.</p>	

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.
<p>Score explanation: There is a sustainable <u>menu</u> available for events at Columbia. The event planning/catering website at the medical center suggests that events catered by the Faculty Club do take</p>	

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.

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.

11. Does your institution's 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	No, the institution is entirely divested from fossil fuels.
2	The institution has partially divested from fossil-fuel companies.
1	The institution has not divested from fossil-fuel companies, but faculty and/or students are conducting organized advocacy for divestment.
0	Yes, the institution has investments with fossil-fuel companies and there have been no efforts to change that.

Score explanation: In 2017, Columbia University divested from coal but not oil and gas companies; in January 2021, Columbia announced 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.

Section Total (18 out of 31)	C+
-------------------------------------	-----------

Back to summary page [here](#)

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%)	$(33 / 69) \times 100 = 48\%$	C
Interdisciplinary Research (17.5%)	$(16 / 17) \times 100 = 94\%$	A
Community Outreach and Advocacy (17.5%)	$(3 / 14) \times 100 = 21\%$	D-
Support for Student-led Planetary Health Initiatives (17.5%)	$(11 / 15) \times 100 = 73\%$	B
Campus Sustainability (17.5%)	$(18 / 31) \times 100 = 58\%$	C+
Institutional Grade	58%	C+