



Planetary Health Report Card:

Geisel School of Medicine



Dartmouth
GEISEL SCHOOL OF
MEDICINE

2021-2022 Contributing Team:

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Summary of Findings

Overall	C-
<u>Curriculum</u>	D+
<ul style="list-style-type: none"> Planetary health (PH) is inadequately covered in the core curriculum, but efforts are being made to incorporate it. Electives focused on planetary health have been proposed at Geisel, which is an exciting development. Recommendations: Topic areas where planetary health could be incorporated are noted in the score explanations. Discussing aspects of planetary health with patients should be added to the <i>On Doctoring</i> Curriculum. PH connections should be added to core course objectives. 	
<u>Interdisciplinary Research</u>	C
<ul style="list-style-type: none"> Dartmouth lacks an institute for planetary health research, yet has some research underway in this area. Research related to PH (i.e. waste audits, impacts of air pollution, or climate change modeling) is led by independent researchers in various departments and is not centralized or easily accessible. Recommendations: The medical school should commit to recruitment of researchers interested in PH and identify researchers at the institution who are already doing work in this area. Forming a centralized website for projects related to PH and healthcare sustainability would help to increase transparency in this area. 	
<u>Community Outreach and Advocacy</u>	D-
<ul style="list-style-type: none"> Healthcare sustainability is not transparent within the medical school or at our affiliated hospitals, but the MS4SF chapter at Geisel is working to expand connections within sustainability across the campus. We are also planning an Earth Day Celebration to bridge the gap between climate change and health in our community. Recommendations: Continued administrative support of student involvement in healthcare sustainability efforts and direct partnership with community organizations such as NH Healthcare Workers for Climate Action to further educate about planetary health within the Dartmouth community is needed. 	
<u>Support for Student-Led Initiatives</u>	B
<ul style="list-style-type: none"> Dartmouth College has a number of established resources available to undergraduates and medical students, including funding for projects and sustainability initiatives. Most medical students are unaware of these opportunities, however, and Geisel does not have active relationships with departments hosting these grants. Recommendations: The medical school administration could further support student initiatives by ensuring medical students are aware of existing opportunities and developing a student fellowship dedicated to PH. 	
<u>Campus Sustainability</u>	D+
<ul style="list-style-type: none"> Dartmouth College has a well integrated Sustainability Office that is involved in green construction, sustainable food and supply procurement, initiatives related to divestment, and community engagement around sustainability. However, they operate separately from the medical school. Recommendations: Geisel could benefit from enhanced communication with the Sustainability Office to increase green practices including sustainable purchasing, transportation initiatives, laboratory sustainability, and waste management. 	

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 “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 (USA), other related departments eg 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 example).

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><i>Score explanation:</i> In spring 2022, the elective “Health and Climate” was offered. Only one student registered for the elective, and it therefore did not take place. Student groups such as Global and Urban Health Scholars have hosted climate-specific lectures, including a 2 hour three-part speaker series hosted by the NH Healthcare Workers for Climate Action, which addressed zones of habitation for infectious disease, resource insecurity, and extreme weather events.</p> <p>An opportunity for improvement in this area would be to remove the restriction placed on students during elective selection. Currently, students are only able to sign up for one elective. When faced with the decision between developing clinical skills in electives such as Ultrasound Basics vs learning about planetary health, students often choose the former. Allowing multiple enrollments would enable students to more holistically pursue their interests.</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.
<p><i>Score explanation:</i> The course <i>Infection, Inflammation, & Immunity</i> had a 2 hour dedicated lecture entitled “Planetary Health and Infectious Disease.” Heat was one topic that was discussed in this lecture. Related to heat, this lecture addressed the learning objective “apply knowledge of health and climate to clinical management of patients.” This was further integrated into a small group case, in which students discussed climate-related factors affecting a patient’s afflictions and management.</p> <p>Although aptly timed in the <i>Infection, Inflammation, & Immunity</i> course, there remain underutilized areas for integration: e.g. connection to climate change when discussing the intersection of extreme heat and worse outcomes for those with cardiovascular or renal diseases in those respective course areas.</p>	

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.
<p><i>Score explanation:</i> The course <i>Infection, Inflammation, & Immunity</i> had a 2 hour dedicated lecture entitled “Planetary Health and Infectious Disease.” During this lecture, group discussion of major weather events and natural disasters was used as an ice breaker to the topic, and examples were given of the ways in which these events disproportionately affect already marginalized communities. In a small group case, extreme weather events impacting patient management was discussed at the end of this lecture.</p> <p>The course <i>Respiratory Medicine</i> had a 1.5 hour dedicated lecture entitled “Environmental Injustice and the Effects on Cardiovascular and Pulmonary Disease.” This lecture addressed extreme weather in the contexts of redlining, air pollution, urban environments, etc, specifically addressing the learning objective “Describe the relationships between indoor and outdoor air pollution and cardiopulmonary health effects”.</p>	

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: In the “Planetary Health and Infectious Disease” lecture during the *Infection, Inflammation, & Immunity* course, the concept that infectious diseases are impacted by a variety of factors, including climate, was introduced. It was emphasized that changing climate can bring about changes in the distribution of infectious diseases, such as changes in vector habitat (for example, increasing incidence of Lyme Disease in North America as the natural habitat of the disease vector *Ixodes scapularis* extends) and global-scale changes in weather (for example, changes in the distribution of malaria with changing precipitation patterns).

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:
There was a session in the M1 Respiratory and Cardiovascular course entitled “Environmental Injustice and the Effects on Cardiovascular and Pulmonary Disease,” which discussed environmental factors that impact pulmonary diseases and health disparity issues that impact the burden of respiratory disease in under-resourced environments. The associated testing objective is: “Describe the relationships between indoor and outdoor air pollution and cardiopulmonary health effects.”

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: This is not currently covered by the Cardiovascular curriculum. While extreme heat was briefly addressed, specific cardiovascular health effects were not covered. Opportunities for improvement include integration with the exercise physiology lectures, particularly with regards to the role of heat in temperature regulation, heart rate, etc.

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 is not currently covered. While climate anxiety was briefly acknowledged during the Planetary Health lecture in the *Infection, Inflammation, & Immunity* course, specific mental health effects such as the weather's impact on depression, anxiety, and PTSD was not discussed.

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 in an elective presentation given to 20 first year medical students who are part of the Global Health Scholars and Urban Health Scholars groups. The speakers focused specifically on flooding in the Hampton Seabrook Estuary as an ecological effect of climate change impacting a vulnerable population. They spoke of resulting water and food insecurity more generally.

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: In the Cardiovascular and Respiratory courses, M1s had a lecture titled “Environmental Injustice and the Effects on Cardiovascular and Pulmonary Disease” that highlighted redlining in the context of air pollution. This lecture addressed the specific (and testable) learning objective, “Analyze the impact of structural inequity on individual and population-level exposures to air pollution and associated negative health impacts.” Elective presentations given to Global and Urban Health Scholars also covered how climate change disproportionately impacts marginalized communities by noting how marginalized populations are less likely to be able to relocate due to events like flooding.

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: In a “Climate Change and Health” lecture attended by Global and Urban Health Scholars (~20 first-years), it was highlighted that those disproportionately affected by climate change globally are the most vulnerable. Specific attention was given to climate changes in NH (such as increasing frequency of extreme heat days and decreasing number of snow-covered days) and communities affected in NH (such as the already socially vulnerable communities in the Hampton Seabrook Estuary being impacted by flooding). There is additional opportunity to discuss climate migration more directly.

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: This topic is not covered. The closest that the Geisel curriculum has come to addressing the impact of environmental exposures on reproductive health is with regards to organophosphate poisoning, which is covered as part of “Cholinergic Receptor Agonists” pharmacologic lecture in the Cardiovascular course. However, the increased use of these chemicals and their relation to climate change, pollution, or sustainable agriculture was not addressed.

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: This topic is not currently covered in core curriculum or elective coursework. One opportunity would be to discuss the groundwater contamination with 1,4-dioxane, a carcinogen, that occurred at Rennie Farm near Dartmouth.

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: This topic is discussed in the M1 elective “Indian Health Service Trip,” where students travel to the Bemidji Area in Minnesota and Wisconsin to learn about Native American culture and health services. Indigenous knowledge was also highlighted during Geisel’s MLK weekend speakers, but these events were not required. The relationship to planetary health solutions was also not clearly conveyed.

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: After implementation of the Race and Health Equity Longitudinal Curriculum (RHE LC), there are two M1 sessions on environmental racism and discrimination including an M1 Respiratory course entitled “Environmental Discrimination: Asthma, TB and Redlining” and an M1 Hematology course discussing redlining and inequitable exposure to lead, factories and carcinogens.

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: In the “Lipoprotein Metabolism” lecture in the Cardiovascular course, it was noted that incorporating a plant-based diet could help lower serum cholesterol. The pathway of plant sterols being transported out for excretion along with free cholesterol was explained. However, the link between plant-based diets and the environment was not directly addressed. Historically, the environmental impact of a plant-based diet was discussed in nutrition lectures spread out throughout the biochemistry and metabolism courses, but this did not take place this year.

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.
<i>Score explanation:</i> In a “Climate Change and Health” lecture attended by Global and Urban Health Scholars (~20 first-years), the carbon footprint of the healthcare system was mentioned.	

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 de-prescribing 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.
<i>Score explanation:</i> Elective coursework with climate-oriented speakers for Global and Urban Health Scholars specifically discussed operating room anesthetic gas as contributing to healthcare’s carbon footprint. This lecture also mentioned opportunities for adding green infrastructure and safe outdoor exercise areas in lower socio-economic communities that typically lack access. However, as this was elective course work and not part of the “core” curriculum, this does not earn points.	

The lectures on Asthma and Respiratory Pharmaceuticals in the Respiratory Medicine course both failed to mention the environmental impacts of various types of inhalers. Another major opportunity was missed during lectures on Cardiovascular Pharmaceuticals, which discussed habit change but not how encouraging exercise may also lead to better environmental outcomes like a reduction in carbon emissions from vehicle use. Likewise, polypharmacy was specifically mentioned during the “Heart Failure Seminar” small group case, but did not address the role of polypharmacy on the environment and instead only addressed it in the context of whether patients would be able to remember to take their full regimen. Hospital waste was not addressed.

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

Score explanation: This topic is not covered in core curriculum or elective coursework. While the Structural Vulnerability Assessment Tool introduced during the Patients and Populations course addresses safe living conditions, toxic exposures, and access to healthy foods, students are not instructed on how to guide conversation to link these features with climate change and global health.

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.

Score explanation: This topic is not covered in core curriculum or elective coursework. This could be discussed in the *On Doctoring* course as part of the social history.

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><i>Score explanation:</i> There is a recently formed sub-committee focused on planetary health within a medical-school wide group dedicated to making longitudinal curricular changes related to race and health equity. Minor curricular improvements are currently being drafted, but is an ongoing area of collaboration.</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.
<p><i>Score explanation:</i> At this point, components of planetary health are taught in standalone lectures in multiple courses. While learning objectives related to planetary health are contained within these lectures, these learning objectives are not part of broader course objectives. Further integration is therefore needed throughout the core curriculum at Geisel.</p>	

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: While there are faculty members interested in contributing to planetary health lectures, there is no such person fulfilling this leadership role at Geisel.

Section Total (25 out of 69)	D+
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Back to Summary Page [here](#)

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

Geisel is very supportive of students seeking out individual learning opportunities, such as electives online or through other institutions. Many students also pursue additional degrees, such as a Masters in Public Health, where topics like those noted above can be covered. For example, there is a course called “Environmental Health Policy,” offered through the Dartmouth Institute. Yet, this course is difficult to add into the Geisel curriculum without enrolling in an MPH. We have identified many critical areas where climate change needs to be incorporated into the core curriculum as a result of its far reaching and disparate impacts. The Race and Health Equity Longitudinal Curriculum (RHE LC) is working to incorporate several of these topics into our courses, but we have a ways to go.

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.
<p><i>Score explanation:</i> At Geisel, there are a couple of faculty who are working in the realms of planetary health or healthcare sustainability. Dr. Heiko Pohl, a gastroenterology professor at Dartmouth, recently completed a waste audit on endoscopies performed at the hospitals here in the Upper Valley. This study was submitted to JAMA in December 2020. Dr. Laura Paulin is a pulmonologist and professor in epidemiology who studies air pollution and its impact on human health. Outside of the medical school, the graduate program <i>Ecology, Evolution, Environment, and Society (EEES)</i> at Dartmouth has researchers working on projects related to planetary health. For example, the lab of Dr. Kathy Cottingham studies the distribution of Lyme Disease in a changing climate and the health impacts of arsenic exposure. Additionally, Dr. Justin Mankin leads the Dartmouth Climate Modeling and Impacts Group that models aspects of climate change.</p>	

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: Dartmouth does work related to environmental exposures in the Children’s Environmental Health and Disease Prevention Research Center. This group is not focused on exposures related to climate change, however. Our Environmental Health and Safety department does work related to laboratory safety and waste management. Some researchers engaged in planetary health research are part of the graduate program *Ecology, Evolution, Environment, and Society (EEES)* at Dartmouth. Other institutes at Dartmouth engaged in climate change-related research include the Irving Institute of Energy and Society, Institute of Arctic Studies, Dartmouth Toxic Metals Superfund Research Program, Revers Center, and The Dartmouth Institute for Health Policy and Clinical Practice. A single institute does not exist to bring together the work underway here that relates aspects of environmental and planetary health.

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: Research underway at Dartmouth is led by the investigators and the institution. The community does not have a clear way to give input or make decisions about research projects here.

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: Dartmouth College has an Office of Sustainability with a comprehensive [website](#) about campus sustainability initiatives. Direct ties to health and the environment are not clear here, however. Additionally, the [Children’s Environmental Health and Disease Prevention Research Center](#) also has a website that brings together their research related to pediatric and maternal environmental exposures, but again this is not directly tied to planetary health. While these exist, they are lacking in centralizing projects related to planetary health.

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: Dartmouth College’s Irving Institute for Energy and Society hosted a virtual conference in May 2021 focused on energy futures, meeting climate targets through renewable energy sources, and global energy access. The Physicians for Human Rights group at the Geisel School of Medicine at Dartmouth hosted a conference on [Planetary Health](#) in January 2019. The [Real Organic Project Symposium](#) is also hosted at Dartmouth each year- a conference that brings together farmers, scientists, and activists working to keep the integrity of the organic label. Many of the topics are directly related to planetary health: soil health, farming and climate, and more. It would have been hosted at Dartmouth in 2020, but was postponed due to COVID.

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: Dartmouth College has joined the Planetary Health Alliance and the Global Consortium on Climate and Health Education. Dartmouth-Hitchcock Medical Center is also a member of Practice Greenhealth.

Section Total (8 out of 17)	C
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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><i>Score explanation:</i> Geisel does not have consistent partnerships with organizations involved in environmental health. Students can independently volunteer with Willing Hands, a local gleaning organization that recovers nutritious food from supermarkets and helps grow nutritious food for pantries in the region. Involvement with this organization is largely student directed. Additionally, there is the opportunity for students to join the new organization New Hampshire Healthcare Workers for Climate Action. Dartmouth College partners with community groups like Sustainable Hanover to work on getting the town of Hanover, NH to 100% renewable energy sourcing.</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.
<p><i>Score explanation:</i> In April 2022, Medical Students for a Sustainable Future will be partnering with other student groups like Geisel Yoga, the Wilderness Medicine Interest Group, Global and Urban Health Scholars, and the Meditation Group to plan an Earth Day Celebration Event which will take place at the Dartmouth Organic Farm. The goal is for this event to continue annually. Students from Geisel, The Dartmouth Institute, faculty from the medical school and hospital, and other members of the community can take part. This event is open to the community, but was not created with community members as the intended audience. However, since this event has not taken place as of the submission of this report card, we scored this metric as a 0.</p>	

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.
<p><i>Score explanation:</i> No such communication exists at Geisel or at DHMC, and the undergraduates are the Sustainability Office's target audience. The Sustainability Council at DHMC may provide these communications in the future. Students join that group based on interest level.</p>	

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: There are no courses, however there were 3 Grand Rounds on climate change and health in the past two years: “Medical Consequences of Climate Change,” given by Dr. Douglas M. DeLong, “Climate Change and Clinical Practice: The Urgency and Opportunity of Now,” given by Dr. Rebecca Philipsborn, and “Climate Change, Air Pollution, and Health,” given by Dr. Patrick Kinney. These counted as CME opportunities for physicians at DHMC. Review of [archived CME and CNE materials](#), [upcoming Grand Rounds](#), or [upcoming trainings](#) at DHMC at the time of report completion showed no other courses directed towards addressing planetary health. [New Hampshire Healthcare Workers for Climate Action](#) (NH HWCA) has offered many events that count as continuing education credits for physicians in New Hampshire and Vermont. These are virtual lectures that encompass topics such as climate change and human migration, climate change and birth outcomes, and mental health impacts of climate change. Many healthcare professionals at Dartmouth access these, but they are not offered through DHMC.

5. Does your medical school or its primary affiliated hospital 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: Educational materials for patients related to environmental health exposures, for example in pulmonology, are available upon request or when given by a physician if they deem it relevant. This varies between departments at DHMC. Medical Students for a Sustainable Future at Geisel is working with New Hampshire Healthcare Workers for Climate Action on securing QR codes to display in provider offices which will offer patients material related to environmental health exposures.

6. Does your medical school or its primary affiliated hospital 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: DHMC or affiliated hospitals do not have accessible educational materials related to climate change and health impacts.

Section Total (3 out of 14)	D-
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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><i>Score explanation:</i> Medical students can apply for funding for projects related to energy through the Irving Institute of Energy. Medical students are also eligible to apply for project funding through Dartmouth College’s Sustainability Office, though this information is not easy to find and few medical students are likely aware of this resource. In addition, there are unfunded QI opportunities within the second and fourth year curricula that could be used to focus on sustainability or planetary health-related projects. Medical students can also submit funding requests to the medical school Student Government, and sustainability-focused initiatives would be considered.</p>	

2. Does your institution 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.
<p><i>Score explanation:</i> Both Dartmouth College and Geisel offer funded research opportunities to medical students, a number of which could be used to conduct a project related to sustainability and/or climate change and health as long as other existing criteria were met. These include M1 summer research funding, the Swigart Ethics Fellowship, and the Schweitzer Fellowship. In addition, medical students are eligible to apply for mini-grants through the Irving Institute for Energy at Dartmouth College. There are no dedicated funds for planetary health, climate change and health, or sustainable healthcare.</p>	

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.
<p><i>Score explanation:</i> There is no webpage within the medical school online site that would meet the above criteria. Dartmouth College hosts websites for the Sustainability Office and the Irving Institute for Energy, but neither of these is specific to planetary health. As there were no pages within the medical school or our broader institution that met the above criteria, we assigned a score of 0.</p>	

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: The Geisel chapter of Medical Students for a Sustainable Future (MS4SF) was started in the summer of 2020 and is eligible for student group funding through the medical school. We also have begun meeting with New Hampshire Healthcare Workers for Climate Action and a newly formed group of physicians interested in the intersection of climate change and health at DHMC.

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 no single, overarching institutional decision-making council at Dartmouth. Undergraduate students sit on most institutional level sustainability groups such as the Sustainability Working Group that created the “Our Green Future” report for the College, and are also present on almost all ad hoc committees. There is no formal position within the medical school’s Student Government body or Medical Education Committees. Similarly, the graduate student council (for which combined-degree students are eligible) does not have a dedicated position. Geisel recently formed a Planetary Health sub-committee on the Race and Health Equity (RHE) Longitudinal Curriculum (LC) committee to advocate for curricular reform, but this sub-committee has not taken any notable steps beyond its formation at this point. A medical student representative is part of the RHE LC to advocate for curricular reform to include aspects of planetary health.

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) The Dartmouth Organic Farm hosts the Farm Club, which is primarily run for undergraduate students but welcomes interested medical students. Since the spring of 2021, medical students have the opportunity to volunteer at the Farmacy at Dartmouth-Hitchcock Medical Center and learn about organic agriculture, how to run small vegetable gardens, and links to healthcare. At the medical school orientation, M1s also volunteer at local farms. Score of 1.

(2) Medical students can attend the [speaker series](#) hosted by NH Healthcare Workers for Climate Action, which hosts many talks around the topic of planetary health. This series is not directed at students, but students are encouraged to attend. The Physicians for Human Rights chapter at Geisel organizes a yearly conference, and their 2019 theme was planetary health. Dartmouth College hosts a number of student-facing events related broadly to sustainability and climate change, some of which include discussions on the impact of climate change on health. One recent example is a talk by Dr. Diana Hernandez (Mailman School of Public Health, Columbia University) on "[Energy, Poverty and Health in a Changing Climate: Implications for Policy and Practice](#)". Score of 1.

(3) Medical students at Geisel have been invited to join and participate with a new climate & health based organization called New Hampshire Healthcare Workers for Climate Action (NH HWCA) based out of Concord, NH, which formed in August 2021 and is chaired by Dr. Bob Friedlander, a retired palliative care oncologist. The organization consists of multiple working groups (Behavioral Health, Climate Justice, Education, Communication, and Children's Health). NH HWCA has been involved with directly educating ~20 first year Urban and Global Health Scholars. Speakers from NH HWCA will also be participating in a student led Earth Day Celebration event in 2022. Score of 1.

(4) The Hopkins Center for the Arts hosts a wide array of cultural events throughout the year, and their programming in the 2019/2020, 2020/2021, and 2021/2022 seasons has included several performances related to climate change and planetary health. These have included a screening of [The Biggest Little](#)

[Farm](#), performance of [The Force of Thing: An Opera for Objects](#), and a performance of the play [The Living](#) with panelists discussing the intersections between climate change, emerging pandemics, and politics of healthcare. There are also screenings of films and live performances centered around indigenous practices and art. Score of 1.

(5) There are numerous local environmental organizations in the Upper Valley region, many focused around sustainable and organic agriculture, local food systems, and discussions about local energy needs and housing. Medical student groups have occasionally organized gleaning volunteer days with Willing Hands, but students are always welcome to volunteer with those organizations on an individual basis. Score of 1.

(6) The Dartmouth Outing Club organizes many opportunities for students to engage in outdoor activities. These are primarily aimed at undergraduates, but graduate and medical students are able to use their resources, equipment, and take exercise classes. Score of 1.

Total score: 6/6

Section Total (11 out of 15)

B

Back to summary page [here](#)

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.

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
<p><i>Score explanation:</i> Dartmouth College does have an Office of Sustainability. Within the Office Of Sustainability, there is no one dedicated to sustainability at the medical school. Likewise, the main hospital affiliated with Geisel, Dartmouth-Hitchcock Medical Center, has a sustainability council that is newly reformed after the sustainability programs at the hospital were cut in 2016 due to budgetary restrictions.</p>	

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.
0	There is no stated goal for reduction of CO2 emissions.

Score explanation: In Dartmouth’s [2017 Sustainability Road Map](#), Dartmouth set a goal to “improve the efficiency of energy transmission and distribution systems by 20 percent by 2030 (relative to efficiency levels from 2010), obtain 50 percent of energy supply from renewable sources by 2025 and 100 percent by 2050, and reduce Scope 1 and 2 greenhouse gas emissions by 50 percent by 2025 and 80 percent by 2050 (relative to a 2010 emissions baseline)”. The plan to achieve these goals included steam to hot water conversion and a new power generation source. There is no goal that clearly states carbon neutrality. The town of Hanover, NH where Dartmouth is located has a [goal of 100% renewable energy by 2050](#). The 2017 sustainability goals are revised every 5 years. It is anticipated that in the 2022 revisions, Dartmouth will aim for net zero 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: According to the Sustainability Office, about 13% of the medical school’s electricity is coming from renewables. Approximately 3% of their consumption is generated on campus from rooftop solar. This only pertains to the medical school buildings on campus. Medical school facilities at the hospital use a different energy supply. 10% of the energy at the hospital is produced from a solar array through Norwich Solar Technologies.

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: Dartmouth adheres to the National Green Building Standard for all buildings on the Dartmouth campus. New buildings are constructed following these guidelines, and old buildings are updated or are currently being retrofitted to meet Dartmouth's energy goals.

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 medical school has not specifically implemented environmentally-friendly transportation options. Although the medical school does not offer a specific option, the town where the medical school and hospital are located (Lebanon and Hanover, NH) offers free public bus transportation between the medical school and the hospital.

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: The medical school has a recycling program through the college. However, composting/ organic recycling is not accessible.

7. Does the medical school 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.

Score explanation: The medical school does not have any food and beverage sustainability guidelines. The hospital dining options adhere to some of GreenHealth Exchange procurement guidelines, but these are not comprehensive. The medical school is not involved in these selections.

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.

Score explanation: Geisel does not have supply procurement sustainability guidelines. The main affiliate hospital, Dartmouth Hitchcock Medical Center, adheres to some sustainability guidelines through [GreenHealth Exchange](#).

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.
<i>Score explanation:</i> No such guidelines exist at Dartmouth. Any sustainability initiatives at events are student led.	

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.
<i>Score explanation:</i> Dartmouth does have an Environmental Health and Safety Department that has an environmental focus. It is primarily focused on laboratory chemical waste management. In that sense, this department provides feedback on how to help labs be more environmentally friendly. The guidelines are not clearly noted anywhere, however. A representative from EHS is willing to have these types of discussions with laboratory personnel if sought out. There is an opportunity for Geisel to team up with My Green Labs to make laboratory spaces more environmentally friendly.	

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 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.

Score explanation: According to the Sustainability Office, “Dartmouth has not divested. While we have no direct investments in coal and very very few in fossil fuel, it is possible that portions of funds managed by external entities are invested in these asset classes.” There is an undergraduate group called [Divest Dartmouth](#) that is working to encourage Dartmouth to divest.

Section Total (11 out of 31)

D+

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 Geisel School of Medicine at Dartmouth

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

Section	Raw Score	Letter Grade
Planetary Health Curriculum (30%)	$(25 / 69) \times 100 = 36\%$	D+
Interdisciplinary Research (17.5%)	$(8 / 17) \times 100 = 47\%$	C
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%)	$(11 / 31) \times 100 = 35\%$	D+
Institutional Grade	42%	C-

Report Card Trends

Section Overview

This graph demonstrates trends in overall and section grades for the years in which Geisel School of Medicine at Dartmouth has participated in the Planetary Health Report Card initiative.

PHRC Trends for the Geisel School of Medicine at Dartmouth

