



Planetary Health Report Card:

University of Massachusetts Medical School



2020-2021 Contributing Team:

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Summary of Findings

Curriculum	B-
<ul style="list-style-type: none"> UMass has implemented climate change-related materials in its 2020-2021 core curriculum. The impacts of climate change and health were discussed in more than six core courses in the first and second year curricula and a student driven elective dedicated to climate change and health was offered in early 2021. UMass should work on increasing the depth of the materials covered and expanding to clinical education coursework. Additionally, UMass should create a permanent position on the curriculum committee that is dedicated to developing and monitoring planetary health curricula for students in all four years. 	
Interdisciplinary Research	D
<ul style="list-style-type: none"> The University of Massachusetts 5-campus system offers a wealth of interdisciplinary collaborative research institutes, and working-groups focused on planetary health and healthcare sustainability. UMMS does not have a dedicated research group for planetary health and healthcare sustainability. UMMS leadership should encourage the development of an interdisciplinary planetary health and sustainability institute or encourage participation by faculty in University-wide research programs. 	
Community Outreach and Advocacy	B-
<ul style="list-style-type: none"> UMMS has one student-led project linked to planetary health within the community, though the infrastructure for more programs exists within the population health clerkship. The medical school does not have community-facing events or lectures about planetary health. UMass Memorial and Baystate Health both have educational material devoted to environmental exposure to toxins on their patient-facing websites. However, only Baystate has a section addressing planetary health. UMass Memorial should create a page dedicated to planetary health on their website, in addition to developing patient-facing courses on the impacts of climate on health. 	
Support for Student-Led Initiatives	B
<ul style="list-style-type: none"> UMass offers grants and research opportunities that can be utilized for independent projects initiated by students, however there are none dedicated, specifically to planetary health. UMass should create a grant opportunity or fellowship that specifically supports students interested in planetary health equity. While UMass has a funded student-led group dedicated to planetary health initiatives, it lacks a robust website that can connect students with mentors and projects within planetary health and sustainable healthcare. There are occasional student-facing events regarding planetary health and sustainability, however there should be consistency in these offerings and increased faculty support to increase student interest in these topics. 	
Sustainability	C+
<ul style="list-style-type: none"> The Office of Sustainability at UMMS supports student-led initiatives around climate and health and recently completed a new 5-year sustainability plan. UMMS has a goal of 15% decrease in emissions by 2026 with a detailed plan for achieving this goal. UMMS is held to the University of Massachusetts Board of Trustees Sustainability Policy which sets a goal of achieving net neutrality by 2050. At this time, there is no specific plan in place for the medical school to fulfil this goal. UMass as a system has divested from all direct fossil fuel holdings, but should prioritize divesting from all indirect fossil fuel holdings in the coming year. 	

Statement of Purpose

Planetary health is human health.

The Planetary Health Alliance defines planetary health as “a field focused on characterizing the human health impacts of human-caused disruptions of Earth's natural systems.” This definition is intentionally broad, intended to encompass the multitude of ways that the environment can affect health, including water scarcity, changing food systems, urbanization, biodiversity shifts, natural disasters, climate change, changing land use and land cover, global pollution, and changing biogeochemical flows. The health of humanity is dependent on our environment and our environment is changing rapidly and in disastrous ways. Although the World Health Organization has called climate change “the greatest threat to global health in the 21st century,” many medical school’s institutional priorities do not reflect the urgency of this danger to human health.

As future health professionals, we must be prepared to address the impacts of human-caused environmental changes on our patients’ health. This preparation is in the hands of the institutions providing our medical training. It is imperative that we hold our institutions accountable for educating medical students about the health impacts of climate change and other anthropogenic environmental changes, generating research to better understand health impacts and solutions, supporting related student initiatives, embracing sustainable practices as much as possible, and engaging with surrounding communities that are most affected by environmental threats. Because climate change and environmental threats disproportionately affect vulnerable populations (for example, communities of color, older adults sensitive to health threats, and individuals in low-resource settings), these issues are inherently ones of equity and justice.

With the purpose of increasing planetary health awareness and accountability among medical schools, we have created a 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 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.

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 change. Therefore, it is critical that medical students are trained to understand the health effects of climate change, as well as planetary health 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 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: UMass Medical School offers one student-organized Optional Enrichment Elective (OEE) related to ESH/planetary health. The Climate Action OEE is an eight-week course offered in the spring and is open to all medical, nursing and graduate students. It consists of seven lectures by guest speakers who discuss the intersection of climate change and medicine, as well as related topics such as climate justice and advocacy. The course aims to introduce students to the many connections between planetary and human health and to offer suggestions on how health trainees and physicians can engage in climate change advocacy.</i></p>	

Curriculum: Health Effects of Climate Change

2. Does your medical school curriculum address the relationship between extreme temperature health risks and climate change, as well as the socioeconomic/racial disparities in extreme heat exposure?	
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: As a part of the Medical School multidisciplinary Interstitial Curriculum, third year students were required to attend a 60 minute lecture on climate change, social justice and health organized and presented by fellow medical students. The talk focused on the health impacts of climate change, healthcare sustainability, and environmental justice. It discussed heat related illnesses and the relationship between urban heat islands and historically redlined districts. Additionally, in the FOMI Course Cancer Concepts, lecturers include 1 slide discussing the impact of heat stress on the tumor suppressor genes and cell apoptosis.</i></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: UMass Medical School offers one student-organized OEE related to ESH/planetary health. The Climate Action OEE is an eight-week course offered in the spring and is open to all medical, nursing and GSBS students. It consists of eight lectures by guest speakers who discussed specific intersections between climate change and medicine as well as topics such as climate justice and advocacy. During the 2021 Spring Semester several guest speakers explored the relationship between extreme weather events and/or healthcare systems. For example Dr. Amy Collins, spoke about disruptions in supply chains during natural disasters, and Dr. Cecilia Sorensen spoke about the relationship between extreme weather, forced migration and women's health specifically. Additionally, in the FOMI Course Cancer Concepts, lecturers include 1 slide discussing the impact of extreme weather events on cancer survival- including how extreme weather events often lead to increased exposure to carcinogens and decreased access to medical treatment.</i></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: UMass Medical School offers one student-organized OEE related to ESH/planetary health. The Climate Action OEE is an eight-week course offered in the spring and is open to all medical, nursing and GSBS students. It consists of eight lectures by guest speakers who discuss specific intersections between climate change and medicine as well as topics such as climate justice and advocacy. During the 2021 Spring Semester several guest speakers discussed the relationship between. For example, in her talk about climate change and health, Dr. Regina LaRocque mentioned the increased incidence of Lyme Disease in the Northeast United States related to increased precipitation and temperature changes. Similarly, Dr. Cecilia Sorensen spoke about the increased risk of mosquito borne illness, such as Zika on maternal and neonatal health due to climate change. This topic was also discussed in the 3rd year Interstitial Curriculum, student lead lecture on climate change and health.

5. Does your medical school curriculum address the cardiorespiratory health effects of climate change, including 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: In the FOM1 course, Development Structure and Function (DSF), Terry Flotte MD offers a case-based learning style lecture on the consequences of climate change and global warming on allergic rhinitis and asthma. The lecture touches on the biological effects of pollution, ground level ozone, particulate matter and indoor air pollution, as well as the racial and socioeconomic disparities of exposure and disease burden. Additionally, in the FOM1 course, Foundation of Health and Disease (FHD) students are required to complete an independent learning module on the connection between air pollution and vascular disease. The module emphasizes the relationship between particulate matter from both anthropogenic courses and climate-related sources (e.g. wildfires, and dust) and vascular disease, such as coronary atherosclerosis.

In the second-year course, Organ Systems and Disease, in a lecture of Obstructive Lung Disease, lecturer John A. Rankin MD briefly addresses the connection between ozone, particulate matter, and earlier onset and longer duration pollen seasons and respiratory health.

6. 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: In the FOM2 course, “The Brain: Nervous System and Behavior,” Mai-Lan Rogoff MD, acknowledges the impact of climate change on mental health in her introductory lecture. Additionally, she provides a list of optional reading assignments and multimedia resources on the various connections between climate change and health including the effect of climate change and depression in young people, extreme weather events and PTSD and rising temperatures and suicide rates. Additionally, in the required interstitial curriculum lecture on climate change and health presented to third year students, the presenters spoke about the impact of climate change on mental health including the relationship between extreme weather events and chronic stress, anxiety, and depression. Additionally, in her lecture in the Climate Change and Medicine OEE lecture series, Dr. Sorensen discussed the impact climate change has on women’s mental health and exposure to violence.

7. 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: In the FOM1 course, Foundation of Health and Disease (FHD) students are required to complete an independent learning module on nutrition. In this module there is a slide that discusses the impact of climate change on food security and nutrition, including the direct effects of drought and extreme weather on crop yields, as well as the indirect impacts of mass migration, threatening food security and decreased nutritional content of food.

8. 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, 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: At UMMS, the impact of climate change on marginalized populations is covered during the Interstitial Curriculum lecture on climate change and health, presented to third year students. Lecturer’s discuss the consequences of Redlining, disparities in exposure to pollution, as well as the disparities in health care delivery as it relates to medicine and climate related disease. This topic is also covered extensively in the optional enrichment elective on Climate Change and Health. In the Spring of 2021 this topic was covered by several different lecturers including Caitlin Rublee’s lecture on Climate Justice and Equity, Melanie Garate and Caleb Dresser M.D. lecture on Climate Health

Action and Heat Stress, and Cecilia Sorensen M.D.'s lecture on the impact of climate change on women's health.

9. Does your medical school curriculum address the unequal 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 briefly discussed during the student-led and designed third year interstitial curriculum lecture. The Global Health Pathway at UMass has previously included a session on global environmental health, however that session was not included in the curriculum this year.

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

10. 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: In her talk in the Optional Enrichment on Climate Change and Health in the 2021 Spring Semester, Dr. Cecilia Sorensen spoke about the connection between extreme weather events, heat stress, pollution, forced migration, toxic stress and vector borne disease on maternal and fetal health.

11. Does your medical school curriculum address important human-caused environmental threats that are relevant to the university's surrounding community?

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

0	This topic was not covered.
<p><i>Score explanation: At the University of Massachusetts Medical School, students are required to participate in community service clerkships, known as Population Health Clerkships, in their second year. One of the clerkships works with the group ReGreen Springfield, a group dedicated to planting trees in Springfield, MA, where the UMMS-Baystate campus and Baystate Medical Center are located. As part of the clerkship, students are given a tour of the city, which shows the students the neighborhoods most affected by traffic-related environmental health concerns. Students are educated on local policy decisions, and infrastructure developments that are implicated in current dangerous levels of traffic-related air pollutants, that have had widespread health impacts, specifically on low income communities of color.</i></p>	

12. Does your medical school curriculum address the unique climate and environmental health challenges that have impacted and are impacting Indigenous communities?	
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></p> <p><i>As a part of the Medical School multidisciplinary Interstitial Curriculum, third year students were required to attend a 60 minute lecture on climate change, social justice and health organized and presented by fellow medical students. The talk focused on the health impacts of climate change, healthcare sustainability, and environmental justice and briefly discussed the impact of climate change on indigenous communities, including the environmental, health, and humanitarian related impacts of the Dakota Access Pipeline. Additionally, the MD/PhD program and the North American Indigenous Health Interest Group co-hosted a talk called “Ecocide and AI/AN Health” presented by Ms. Dina Gilio-Whitaker as a part of their annual Physician Scientist Forum on Racism and Injustice.</i></p>	

13. 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, and older adults?	
3	This topic was explored in depth by the core curriculum.
2	This topic was briefly covered in the core curriculum.
1	This topic was covered in elective coursework.
0	This topic was not covered.
<p><i>Score explanation:</i></p>	

In the Epidemiology and Biostatistics course, students have group discussions that cover various topics related to epidemiology and biostatistics, while also discussing determinants of health that impact these topics. In one group discussion, students are asked to read a research article discussing the health impacts of climate change on the Southeastern United States, with a specific focus on how climate change is impacting African American populations. The article is discussed by the students as a way to introduce how a changing climate landscape may impact current and future vulnerable populations and how that will impact current epidemiological and bio-statistical research.

In the first-year course Determinants of Health, students learn about various factors that contribute to the prevalence of disease in specific populations, the access and receipt of care, and the discrepancies in the healthcare system. The Determinants of Health course provided a document with summarized research articles discussing climate change and its role as a determinant of health, while also providing links to these primary and secondary sources. The articles included those that covered how women, children, and people of color are at a greater risk for the impacts of climate change on their health.

As part of the Climate Change and Health Optional Enrichment Elective, Melanie Garate discussed the disproportionate impacts of climate change on communities of color, low-income communities, and marginalized groups. She also discussed the vulnerabilities of older adults, those of lower income, and people of color in relation to heat-related illness. In her lecture on the unique impacts of climate change on women's health, Dr. Celia Sorensen, outlined the disparities that exist as it relates to women's health and climate change, and provided possible solutions for reducing such disparities. Finally, Dr. Caitlin Rublee presented a one hour lecture on the topic of climate justice and equity, describing the vulnerabilities of low-income neighborhoods and communities of color.

Curriculum: Sustainability

14. 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.
<i>Score explanation:</i>	

The University of Massachusetts Medical School does not address the environmental and health co-benefits of a plant-based diet in the core curriculum. However, a lecture on the co-benefits of a plant-based diet was hosted by the University of Massachusetts Climate Action Coalition. Judy Palken, MS, RD, LDN, presented a talk titled “Healthy Planet Eating” and discussed the co-benefits of a plant-based diet in-depth. While this was not covered as part of the curriculum itself, the presentation was available to all University of Massachusetts Medical Students.

15. Does your medical school curriculum highlight the waste generated by the healthcare system and identify ways to advocate for and implement sustainable best practices in health care?

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

Score explanation:

The University of Massachusetts Medical School highlights the waste generated by the healthcare system through one of its OEEs. The elective course covers various relationships of climate change and health through a series of seven seminar-style presentations. In three separate sessions, presented by Dr. Caleb Dresser, Dr. Amy Collins, and Winston Vaughan, the healthcare system contributes to climate change and environmental pollutants is discussed at length. The presentations highlighted the proportion of total worldwide carbon emissions that the healthcare industry contributes with a particular focus on Scope 3 emissions. For example, Dr. Amy Collins discussed broad issues such as how the sourcing of supplies and pharmaceuticals contributes to overall greenhouse gas emissions, as well as current fossil fuel dependency most healthcare institutions require for their energy needs. She also discussed more specific sources of emissions attributable to healthcare such as the anesthetic desflurane as a potent greenhouse gas. Furthermore, multiple sessions in the elective identify ways to advocate for environmentally sustainable practice in healthcare.

Curriculum: Clinical Applications

16. 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.
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1	Yes, there are strategies introduced for having conversations with patients about climate change in elective coursework.
0	No, there are not strategies introduced for having conversations with patients about climate change
<p><i>Score explanation: As a part of the Medical School multidisciplinary Interstitial Curriculum, third year students were required to attend a 60 minute lecture on climate change, social justice and health organized and presented by fellow medical students. This session had one slide on how to talk to patients about climate change by being aware of relevance, actionability, accountability, and timing. This slide was adapted from principles created by students in MS4SF at UCSF.</i></p>	

17. 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><i>Score explanation:</i></p> <p><i>The UMass Medical School Climate Change and Health elective discussed the importance of understanding the environmental exposures a patient has experienced, particularly as it relates to heat and pollution. Drs. Caleb Dresser and Caitlin Rublee in their respective one-hour lectures discussed how to incorporate questions such as access to air conditioning in the summer months and where a patient lives with respect to air pollutants (i.e. traffic conditions) can inform on environmental exposures.</i></p>	

Curriculum: Administrative Support for Planetary Health

18. Is your medical school currently in the process of 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></p>	

The University of Massachusetts Medical School is in the process of improving planetary health education. The Office of Undergraduate Medical Education is strongly supportive of initiatives to increase and improve information presented on climate change, sustainability, and the intersection of both topics with health and healthcare. Current initiatives include the “Climate Change Curriculum” which began its integration into preclinical education in the Fall of 2020. The initiative is actively growing, with more materials being produced to be added to the core, mandatory curriculum in the Spring of 2021 and into the 2021-2022 academic year. Importantly, there are no climate-specific curriculum committees or positions on the committee that are dedicated to integrating planetary health. Additionally, the initiatives are entirely student driven at this moment.

19. 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: Currently, the topics are well-interspaced into the first-year curriculum including courses in biochemistry (related to exposure to free radicals produced by pollutants), genetics (related to the effect of pollutants on DNA methylation patterns), pulmonary health, epidemiology and biostatistics, with added information in the first semester of the second-year curriculum, including topics such as pulmonary pathophysiology. Additionally, there is a resource page that is included in the Psychiatry block of the University’s “Brain” course that includes information on how climate change is impacting mental health. There is one presentation that is included currently in the clinical years. Currently, the majority of the information related to planetary health and climate change is within the first-year curriculum, though planetary health and climate change is discussed in three separate courses of the second-year curriculum, a seminar during the third year “interstitial courses” and student-led expansion of materials across the curriculum is an ongoing project supported by the University’s Office of Undergraduate Medical Education.

20. Bonus: Does your medical school have a program that offers incentives for faculty/departments to develop new planetary health/ESH courses and/or incorporate planetary health/ESH into existing courses?

1	Yes, the medical school has an incentive program.
0	No, the medical school does not have an incentive program.

Score explanation: There currently is not an incentive program for faculty/departments to develop new planetary health/ESH courses or incorporate planetary health/ESH into existing courses.

Section Total (36 out of 58)	B-
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Are there additional curriculum resources offered at your medical school or institution not yet asked about that you would like to describe? If so, please do so below.

Interdisciplinary Research

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

1.Are there researchers engaged in planetary health research and healthcare sustainability research at your medical school?	
4	Yes, there are faculty members at the School of Medicine who have a primary research focus in planetary health and healthcare sustainability.
3	Yes, there are faculty members at the School of Medicine who have a primary research focus in a 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>Note: In order to receive full points for this metric, the research faculty must be faculty at the School of Medicine, regardless of whether or not they are MDs. For topics that satisfy the “planetary health” requirement, see the definition in the beginning of the template. Please name the researchers and their research topic.</i></p>	
<p><i>Score explanation:</i> We carefully reviewed the School of Medicine research network. UMass Medical School has over 300 basic-science faculty in various appointments and close to 3000 associated clinical faculty. We were unable to identify faculty at the Medical School whose direct research or interdisciplinary endeavors focused on planetary health and/or healthcare sustainability. Several faculty members have research interests focused on health problems that are shown to be influenced by changes in climate or environment, such as the epidemiology and treatment of asthma.</p> <p>UMass Medical School is part of a 5-campus system incorporated as the University of Massachusetts. Within the University System we did identify institutes and programs whose focuses are on planetary health and healthcare sustainability. Two examples of these programs are the Institute for Global Health based at the University of Massachusetts - Amherst campus with research focused on global pollution trends. Another example is the Sustainable Hospital Program located at the University of Massachusetts - Lowell campus.</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.
<p><i>Score explanation:</i> The University of Massachusetts Medical School does have an Environmental Health and Safety Department which has a “mission to provide a safe environment to all people associated with the institution.” At the institution level The University of Massachusetts also has several examples of interdisciplinary institutes focused on planetary health. The “Safe Home Care and Hospitals” program has a specific research program focused on Sustainable Hospitals (referenced above in question 1). Another example is the Institute for Diversity Science based at the University of Massachusetts - Amherst Campus. Within the Institute for Diversity Science is an interdisciplinary Climate research group composed of over 60 faculty and researchers with the specific mission to “pursue a wide range of projects that examine the diversity of human impacts and responses in the context of global climate change.”</p> <p>While determining this grade and formulating the score explanation, we also considered the tremendous opportunity for further development of interdisciplinary research on planetary health and health care sustainability, especially at the Medical School. While the UMass - Amherst Climate research group contains 60 faculty members, none of those listed hold a primary appointment in the School of Medicine. We recognize a strong need for further involvement on the part of Medical School Faculty in these or similar research institutes/groups.</p>	

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: No such feedback mechanism was identified at the University of Massachusetts Medical School.

4. Does your institution have a planetary health website, or a website centralizing various campus resources 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: No unified institutional website dedicated to announcing and communicating resources about Planetary Health or Health Care Sustainability was identified at the University of Massachusetts. The University of Massachusetts Medical School does have a well-maintained Office of Sustainability website with numerous resources (<https://www.umassmed.edu/growinggreen/>).

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

4	Yes, the institution has hosted more than one conference or symposium on topics related to planetary health in the past year, including at least one on climate change.
3	Yes, the institution has hosted 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: We were unable to find a conference related to planetary health hosted at the University of Massachusetts in the preceding 3 years.

6. Has your institution or medical school joined the Planetary Health Alliance and/or the Global

Consortium on Climate and Health Education?	
2	Yes, the medical school has joined the Planetary Health Alliance and/or the Global Consortium on Climate and Health Education.
1	Yes, the institution has joined the Planetary Health Alliance and/or the Global Consortium on Climate and Health Education, but the medical school specifically has not.
0	No, the institution has not joined the Planetary Health Alliance or the Global Consortium on Climate and Health Education.
<p><i>Score explanation:</i> The Medical School has not joined either the Planetary Health Alliance or the Global Consortium on Climate and Health Education. The University of Massachusetts School of Public Health based in Amherst Massachusetts has joined the Global Consortium on Climate and Health Education, but this commitment does not likely have any direct impact on students studying at the School of Medicine.</p>	

Section Total (5 out of 19)	D
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Are there additional research resources offered at your medical school or institution not yet asked about that you would like to describe? If so, please do so below.

Community Outreach and Advocacy

Section Overview: *This section evaluates medical school engagement in community outreach and advocacy efforts associated with planetary health. Researching and teaching planetary health is necessary but not sufficient. It is critical that institutions also directly engage with communities most affected by environmental health harms. Although climate change is a problem largely created by those with power and resources, its impacts fall disproportionately on under-resourced populations and communities of color. Institutions should partner with local communities affected by climate change and pollution to share information about environmental health threats, advocate together for change, and provide opportunities for students to be a part of this work.*

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: During the Population Health Clerkship in the PURCH track, medical students are able to work with ReGreen Springfield, an organization promoting the planting of trees in the Springfield community. Students are able to work alongside organizational leaders during dedicated curriculum time and ultimately present their work back to the larger class as part of the Population Health Clerkship. The UMass Medical School Office of Sustainability has several meaningful community partnerships. To name a few, they have partnered with the Regional Environmental Council in support of a community garden that is now located on campus, they work with Partners for World Health to donate medical supplies diverted from waste to mission trips, and they have worked with MassEvolves to advance electric vehicle adoption.</i></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.
<i>Score explanation: Although the UMass Office of Sustainability does hold annual Earth Day events focusing on sustainability, these events are typically only open to UMass students and employees. There are currently no community-facing courses or events at UMMS that address planetary health.</i>	

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.
<i>Score explanation: The Office of Sustainability has a regular newsletter: Growing Green, which includes sustainability tips and information about efforts on the UMMS campus. Additionally, information on how to get involved with the UMMS Sustainability and Climate Action Plan is sometimes included in the weekly student bulletin.</i>	

4. Does the medical school offer continuing medical education (CME) courses that address planetary health and/or sustainable healthcare?	
2	Yes, multiple in-person or online CME courses relating to planetary health and/or sustainable healthcare are offered, including at least one with a primary focus of planetary health.
1	Yes, one in-person or online CME course related to planetary health and/or sustainable healthcare is offered.
0	There are no CME courses on planetary health or sustainable healthcare topics.
<i>Score explanation: According to UMMS CME department, no CME courses are offered. Dr. Matthew Masiello, a pediatric hospitalist and climate expert, presented at Pediatric Grand Rounds on 10/24/2019 titled: "Climate Change and the Healthcare Professional" which offered 1 AMA PRA Cat 1 credit.</i>	

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.
<p><i>Score explanation: For the purposes of this evaluation, Baystate Health was considered to be an affiliated hospital with UMMS. Both Baystate and UMMS have educational materials on environmental exposures within their respective patient information libraries, accessible online.</i></p> <p>http://myhealth.umassmemorial.org/Library/DiseasesConditions/Adult/Environmental/85.P00820 https://mybaystate.baystatehealth.org/#/health-dictionary</p>	

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.
<p><i>Score explanation: The Baystate Medical Center patient library links to a resource on climate change through the National Library of Medicine. The UMass Memorial does not have any patient-facing materials about the impacts of climate on health.</i></p> <p>https://medlineplus.gov/climatechange.html</p>	

Section Total (9 out of 14)	B-
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Are there additional community engagement and advocacy resources offered at your medical school or institution not yet asked about that you would like to describe? If so, please do so below.

Support for Student-Led Planetary Health Initiatives

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

1. Does your institution offer support for medical students interested in enacting a sustainability initiative?	
2	Yes, the institution offers grants available to medical students for students to enact sustainability initiatives.
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.
0	No, the institution does not offer opportunities or support for sustainability initiatives.
<p><i>Score explanation: UMMS has resources and opportunities available for students who are interested in enacting sustainability initiatives. While these resources are not specifically for sustainability initiatives, students may use them for projects to further sustainability work. Some examples of grants students can apply for include:</i></p> <ul style="list-style-type: none"> <i>-SBC Social Justice grant \$2500</i> <i>-MLK Jr. Semester of Service Student Awards \$500</i> <p><i>Students can also work on a sustainability QI project through the Interprofessional Quality Improvement Council, which provides the structure, training and faculty and peer support and feedback to conduct QI projects.</i></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: While there is no explicit paid fellowship for students to do research related to planetary health or sustainable healthcare, the medical school offers stipends for students to conduct research or develop curriculum with faculty over the summer in between their first and second year. Students may use this opportunity to develop curriculum or do research on the intersection of planetary health and medicine, climate action or sustainable healthcare.

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: The UMMS website features a webpage called “Growing Green: Campus Sustainability” that discusses sustainability in relation to the medical school campus; however, it lacks information on current initiatives and mentors who are passionate about climate action, planetary health and sustainable healthcare. It does not address sustainable healthcare.

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: The UMMS Coalition for Climate Action is a funded student organization with faculty support dedicated to planetary health and sustainability in healthcare.

5. Is there a student liaison representing sustainability interests who serves on a medical school or

institutional decision-making council to advocate for sustainability best practices?	
1	Yes, there is a student representative that serves on a medical school or institutional decision-making council.
0	No, there is no such student representative.
<p><i>Score explanation: Until recently, UMMS Student Government Alliance, a council formed by student leadership across the SOM, School of Nursing and Graduate School of Biomedical Science, had a student representing sustainability at UMMS. The SGA was reorganized in 2020 and the sustainability liaison was written out of the bylaws. There is currently no student liaison representing sustainability on institutional decision-making councils.</i></p>	

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.
<p><i>Score explanation:</i></p> <ul style="list-style-type: none"> • <i>There are a few opportunities for students to experience organic and sustainable agriculture. Examples include: the on-campus student-run community garden which provides healthy produce to anyone in the UMass community, as well volunteering opportunities at the Community Harvest Project and the AIDS Project Worcester community garden, two organizations which provide fresh produce to communities experiencing food insecurity.</i> • <i>Opportunities to attend panels, talks and speaker series exist through the Climate Change and Medicine OEE, the Global Health Pathway, and department sponsored talks.</i> • <i>Students had the opportunity to learn from the Greening the Gateway Cities Program in Springfield, which aimed to plant trees and increase canopy cover in environmental justice neighborhoods, directly impacting the health of the residents as well as energy efficiency in the neighborhoods. Students helped administer surveys to populations impacted by the program,</i> 	

learning from the residents about the benefits of the program and what challenges they continue to face.

Section Total (10 out of 15)

B

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: The University of Massachusetts Medical School has an Office of Sustainability with two dedicated full-time staff. This Office of Sustainability is specific to the UMass Medical School campus but does collaborate with Offices of Sustainability at all UMass campuses.</i></p>	

2. Does your medical school and/or institution have a stated goal of carbon neutrality by 2050?	
4	The medical school is already carbon neutral.
3	Yes, there is a stated carbon neutrality goal and the medical school has a well-defined and adequate plan in place to achieve this goal.
2	Yes, there is a stated carbon neutrality goal, but the medical school 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.
<p><i>Score explanation: The UMMS Office of Sustainability has a stated goal of reducing Scope 1 and Scope 2 greenhouse gas emissions by 15% by 2026 and has a detailed 5-year plan to achieve this goal which includes supporting replacement of inefficient HVAC equipment, recommissioning existing building</i></p>	

systems, and increasing use of a heat exchanger. The UMass system, of which the medical school is a part, has a commitment to achieving climate neutrality by 2050. There are no specific plans in place for achieving the goal of climate 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: All medical school buildings are currently 100% powered by fossil fuels. The medical school does have solar net metering agreements, but the renewable energy certificates are not retained by the medical school.

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: Sustainable building practices are utilized for new buildings. A new research building is currently being constructed on campus, and the target for this building is LEED gold with net zero energy. The most recent building to be constructed, the Albert Sherman Center, is LEED gold and was designed with sustainability in mind. The building was designed for thermal optimization and 95% of the steel that was used was made from recycled material. The medical school follows “LEED plus” building standards as required by MA [Executive Order 484](#). Extensive recommissioning has been undertaken, but no buildings have been completely retrofitted.

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: Many students live close to campus and choose to walk. There are currently 9 electric vehicle charging stations on campus. There is a shuttle system in place that is not electrified. The Worcester Regional Transit Authority serves the UMass campus and connects to all major local routes in addition to connecting to the local commuter rail stop for access to Boston. The Office of Sustainability has also previously hosted a “Commuter Challenge” in partnership with Bay State Commute which encouraged both students and faculty to choose green methods of transportation including carpooling, biking, walking, working remotely, and using public transportation for one month. Employees can also choose to carpool, for which they would be able to split the cost of one parking permit and access parking spots that are closer to the entrance.

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: UMass Medical School does not currently have a composting program. They do have conventional recycling programs, but recycling bins are not always easily accessible or conveniently placed. They also have a program called “SWAP,” short for “Surplus with a Purpose,” which facilitates redistribution of surplus office supplies, lab equipment, and furniture that would have otherwise been disposed of.

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.
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2	There are sustainability guidelines for food and beverages, but they are insufficient or optional. The medical school is engaged in efforts to increase food and beverage sustainability.
1	There are sustainability guidelines for food and beverages, but they are insufficient or optional. The medical school is not engaged in efforts to increase food and beverage sustainability.
0	There are no sustainability guidelines for food and beverages.
<p><i>Score explanation: Sustainable food purchasing requirements are included in the contract language with the UMass food provider, NexDine. Specific language includes “maximizing the purchase and utilization of foods within a 200-mile radius of Worcester,” minimizing waste, and prioritizing the use of plant-based foods . UMass Medical School typically diverts 3 tons of food waste per year to a local pig farm, however this program is currently on hold. In fiscal year 2020, 32% of total food and beverage expenditures were plant-based and 5% were sustainably or ethically sourced.</i></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><i>Score explanation: There are no official sustainability guidelines in the medical school’s procurements. Sustainability and environmental standards are sometimes considered during the bidding process, however, there is no official language in the school’s procurement guidelines that requires sustainability standards to be met.</i></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><i>Score explanation: There are no sustainability requirements or guidelines for events hosted at the medical school. The UMMS Sustainability Plan includes plans to develop a sustainable foods event guide, but this has not yet been created or implemented.</i></p>	

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: A fume hood efficiency project in the Lazare Research Building at UMass Medical School was recently completed, which resulted in reduced costs and energy consumption. There is also a chemical “exchange” program for unopened chemicals still in good condition to reduce waste of unused chemicals. Additionally, the Office of Sustainability has an ongoing “shut the sash” campaign that encourages lab members to lower the sashes of fume hoods to reduce energy usage. Lastly, the Office of Sustainability hosts regular “lunch and learn” sessions for departments across the medical school.

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: UMass has completely divested from both coal and fossil fuels only for directly held shares. For this reason, we are categorizing this as a partial divestment given that endowment holdings that are not directly held by UMass may still include divestment in fossil fuels.

Section Total (17 out of 29)	C+
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Are there additional sustainability resources offered at your medical school or institution not yet asked about that you would like to describe? If so, please do so below.

Grading

Section Overview

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

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

Planetary Health Grades for the University of Massachusetts Medical School

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

Section	Raw Score	Grade
Planetary Health Curriculum (30%)	36 / 58 = 62%	B-
Interdisciplinary Research (17.5%)	5 / 19 = 26%	D
Community Outreach and Advocacy (17.5%)	9 / 14 = 64%	B-
Support for Student-led Planetary Health Initiatives (17.5%)	10 / 15 = 67%	B
Campus Sustainability (17.5%)	17 / 29 = 59%	C+
Institutional Grade	56%	C+